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DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
on the quality of water intended for human consumption (recast)

DIRECTIVE (EU) 2020/...
OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of ...

on the quality of water intended for human consumption
(recast)

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 192(1) thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee¹,

Having regard to the opinion of the Committee of the Regions²,

Acting in accordance with the ordinary legislative procedure³,

¹ OJ C 367, 10.10.2018, p. 107.

² OJ C 361, 5.10.2018, p. 46.

³ Position of the European Parliament of 28 March 2019 [(OJ ...)/(not yet published in the Official Journal)] and position of the Council at first reading of ... [(OJ ...)/(not yet published in the Official Journal)]. Position of the European Parliament of ... [(OJ ...)/(not yet published in the Official Journal)].

Whereas:

- (1) Council Directive 98/83/EC¹ has been substantially amended several times². Since further amendments are to be made, that Directive should be recast in the interests of clarity.
- (2) Directive 98/83/EC set the legal framework to protect human health from the adverse effects of any contamination of water intended for human consumption by ensuring that it is wholesome and clean. This Directive should pursue the same objective and should improve access to such water for all in the Union. To that end, it is necessary to lay down at Union level the minimum requirements with which water intended for that purpose should comply. Member States should take the necessary measures to ensure that water intended for human consumption is free from any micro-organisms and parasites and from any substances which, in numbers or concentrations, in certain cases, constitute a potential danger to human health, and that it meets those minimum requirements.

¹ Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption (OJ L 330, 5.12.1998, p. 32).

² See Annex VI, Part A.

- (3) It is necessary to exclude from the scope of this Directive natural mineral waters and waters which are medicinal products, since such types of water are covered by Directives 2009/54/EC¹ and 2001/83/EC² of the European Parliament and of the Council respectively. However, Directive 2009/54/EC deals with both natural mineral waters and spring waters, and only the former category should be exempted from the scope of this Directive. In accordance with the third subparagraph of Article 9(4) of Directive 2009/54/EC, spring waters should comply with this Directive and, with regard to microbiological requirements, spring water should comply with Directive 2009/54/EC. In the case of water intended for human consumption put into bottles or containers intended for sale, or used in the manufacture, preparation or treatment of food, such water should, as a matter of principle, continue to comply with this Directive until the point of compliance, namely the tap, and should after that point be considered as food if it is intended to be, or reasonably expected to be, ingested by humans, in accordance with Regulation (EC) No 178/2002 of the European Parliament and of the Council³.

¹ Directive 2009/54/EC of the European Parliament and of the Council of 18 June 2009 on the exploitation and marketing of natural mineral waters (OJ L 164, 26.6.2009, p. 45).

² Directive 2001/83/EC of the European Parliament and of the Council of 6 November 2001 on the Community code relating to medicinal products for human use (OJ L 311, 28.11.2001, p. 67).

³ Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety (OJ L 31, 1.2.2002, p. 1).

In addition, food business operators that have their own water source and use it for the specific purposes of their business should be able to be exempted from this Directive provided that they comply with relevant obligations, in particular regarding hazard analysis and critical control point principles and remedial actions under relevant Union legislation on food. Food business operators that have their own water source and act as water suppliers should comply with this Directive in the same way as any other water supplier.

- (4) Following the conclusion of the European citizens' initiative on the right to water ('the Right2Water initiative'), the Commission launched a Union-wide public consultation and performed a Regulatory Fitness and Performance (REFIT) Evaluation of Directive 98/83/EC. It became apparent from that exercise that certain provisions of that Directive needed to be updated. Four areas were identified as offering scope for improvement, namely the list of quality-based parametric values, the limited reliance on a risk-based approach, the imprecise provisions on consumer information, and the disparities between approval systems for materials that come into contact with water intended for human consumption and the implications such disparities have for human health. In addition, the Right2Water initiative identified as a distinct problem the fact that part of the population, in particular marginalised groups, has no access to water intended for human consumption, and providing such access is a commitment under Goal 6 of the Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda for Sustainable Development.

A final issue identified is the general lack of awareness of water leakages, which are driven by underinvestment in maintenance and renewal of water infrastructure, as also pointed out in the European Court of Auditors' Special Report No 12/2017 of 5 July 2017 'Implementing the Drinking Water Directive: water quality and access to it improved in Bulgaria, Hungary and Romania, but investment needs remain substantial'.

- (5) In 2017, the World Health Organisation (WHO) Regional Office for Europe conducted a detailed review of the list of parameters and parametric values laid down in Directive 98/83/EC in order to establish whether there is a need to adapt that list in light of technical and scientific progress. In view of the results of that review, enteric pathogens and *Legionella* should be controlled and six chemical parameters or parameter groups should be added. For four of the six new parameters or parameter groups, parametric values that are more stringent than those proposed by the WHO, though nonetheless feasible, should be laid down in light of other recent scientific opinions and the precautionary principle. For one of the new parameters, the number of representative substances should be reduced and the value adapted. For chromium, the value remains under WHO review, and a transitional period of 15 years should therefore apply before the value becomes more stringent. In addition, the WHO recommended that three representative endocrine-disrupting compounds may be considered as benchmarks, for assessing the occurrence of endocrine-disrupting compounds and their treatment efficacy where necessary, with values of 0,1 µg/l for Bisphenol A, 0,3 µg/l for Nonylphenol and 1 ng/l for Beta-estradiol.

However, based on a 2015 opinion of the European Food Safety Authority (EFSA), it was decided that one of those three compounds, Bisphenol A, should be added to this Directive with a health-based parametric value of 2,5 µg/l. Furthermore, Nonylphenol and Beta-estradiol should be added to the watch list to be established by the Commission pursuant to this Directive.

- (6) In relation to lead, the WHO recommended retaining the current parametric value, but noted that concentrations should be as low as reasonably practicable. Therefore, it should be possible to retain the current value of 10 µg/l for 15 years after the date of entry into force of this Directive. By the end of this transitional period, at the latest, the parametric value for lead should be 5 µg/l. In addition, since existing lead pipes in houses and buildings are a persisting issue and since Member States do not always have the necessary authority to impose the replacement of those pipes, the value of 5 µg/l should remain aspirational when it comes to obligations related to domestic distribution systems. However, for all new materials that come into contact with water intended for human consumption, regardless of whether they are to be used in supply or domestic distribution systems, to be authorised in accordance with this Directive, the value of 5 µg/l should apply at the tap.

- (7) In order to address growing public concern about the effects of emerging compounds, such as endocrine-disrupting compounds, pharmaceuticals and microplastics, on human health through use of water intended for human consumption, and to address new emerging compounds in the supply chain, a watch list mechanism should be introduced in this Directive. The watch list mechanism will make it possible to respond to growing concerns in a dynamic and flexible way. It will also enable follow-up on new knowledge about the relevance for human health of those emerging compounds and on new knowledge about the most appropriate monitoring approaches and methodologies. This watch list mechanism for water intended for human consumption is part of the response to various relevant Union policies, as set out in the communication of the Commission of 11 March 2019 ‘European Union Strategic approach to pharmaceuticals in the environment’, the communication of the Commission of 7 November 2018 ‘Towards a comprehensive European Union framework on endocrine disruptors’ and the Council Conclusions of 26 June 2019 ‘Towards a sustainable chemicals policy Strategy of the Union’.
- (8) The WHO also recommended that three parametric values be made less stringent and five parameters be removed from the list of parameters and parametric values laid down in Directive 98/83/EC. However, not all of these changes are considered necessary, as the risk-based approach introduced by Commission Directive (EU) 2015/1787¹ allows water suppliers to remove a parameter from the list of parameters to be monitored under certain conditions. Treatment techniques to meet those parametric values are already in place.

¹ Commission Directive (EU) 2015/1787 of 6 October 2015 amending Annexes II and III to Council Directive 98/83/EC on the quality of water intended for human consumption (OJ L 260, 7.10.2015, p. 6).

- (9) The parametric values laid down in this Directive are based on the scientific knowledge available and the precautionary principle and are selected to ensure that water intended for human consumption can be consumed safely on a life-long basis, thus ensuring a high level of health protection.
- (10) A balance should be struck to prevent both microbiological and chemical risks, and to that end and in light of a future review of the parametric values, the establishment of parametric values applicable to water intended for human consumption should be based on public health considerations and on a method of risk assessment.
- (11) Indicator parameters have no direct public health impact. However, they are important as a means of determining how production and distribution facilities for water intended for human consumption are functioning, and of evaluating water quality. Such parameters can help to identify water treatment deficiencies and play an important role in increasing and maintaining consumer confidence in water quality. Therefore, Member States should ensure that such parameters are monitored.
- (12) Where necessary to protect human health within their territories, Member States should be required to set values for additional parameters not included in Annex I, based on the precautionary principle.

- (13) Safe water intended for human consumption means not only the absence of harmful microorganisms and substances, but also the presence of certain amounts of natural minerals and essential elements, taking into consideration that long-term consumption of demineralised water or water very low in essential elements such as calcium and magnesium can compromise human health. A certain amount of such minerals is also vital in order to ensure that water intended for human consumption is neither aggressive nor corrosive and to improve the taste of such water. Minimum concentrations of such minerals in softened or demineralised water could be considered in accordance with local conditions.
- (14) Preventive safety planning and risk-based elements were only considered to a limited extent in Directive 98/83/EC. The first elements of a risk-based approach were introduced in 2015 in Directive (EU) 2015/1787, allowing Member States to derogate from their established monitoring programmes, provided that credible risk assessments are carried out which could be based on the WHO's Guidelines for Drinking Water Quality (WHO Guidelines). The WHO Guidelines, which lay down the so-called 'Water Safety Plan' approach, including for small communities, together with standard EN 15975-2 concerning security of drinking water supply, are internationally recognised principles on which the production and distribution of water intended for human consumption, and the monitoring and the analysis of parameters in such water, are based. Those first elements of a risk-based approach should be maintained in this Directive.

(15) To ensure that the elements of a risk-based approach introduced in Directive (EU) 2015/1787 are not limited to monitoring aspects, to focus time and resources on relevant risks and on cost-effective source measures, and to avoid analyses of and effort being spent on non-relevant issues, it is appropriate to introduce a complete risk-based approach to water safety, covering the whole supply chain from the catchment area, abstraction, treatment, storage and distribution to the point of compliance. That approach should be based on the knowledge gained and actions carried out under Directive 2000/60/EC of the European Parliament and of the Council¹ and should take into account more effectively the impact of climate change on water resources. That risk-based approach should consist of three components. First, identification of the hazards associated with the catchment areas for abstraction points (“risk assessment and risk management of the catchment areas for abstraction points of water intended for human consumption”), in line with the WHO Guidelines and Water Safety Plan Manual. Second, a possibility for the water supplier to adapt monitoring to the main risks and to take the necessary measures to manage the risks identified in the supply chain from the abstraction, treatment, storage and distribution of water (“risk assessment and risk management of the supply system”). Third, an assessment of the potential risks stemming from domestic distribution systems, such as *Legionella* or lead (“risk assessment of the domestic distribution systems”), with special focus on priority premises. Those assessments should be regularly reviewed, *inter alia*, in response to threats from climate-related extreme weather events, known changes of human activity in the abstraction area or in response to source-related incidents. The risk-based approach should ensure a continuous exchange of information between competent authorities and water suppliers.

¹ Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (OJ L 327, 22.12.2000, p. 1).

- (16) In order to reduce the potential administrative burden for water suppliers supplying between 10 m³ and 100 m³ per day as an average or serving between 50 and 500 people, Member States should be able to exempt those water suppliers from carrying out a risk assessment of the supply system, provided that regular monitoring in accordance with this Directive is carried out. As an exception, the implementation of the risk-based approach should be adapted to the specific constraints of maritime vessels that desalinate water and carry passengers. Union flag maritime vessels comply with the international regulatory framework when sailing in international waters. It should be ensured that priority is given to existing international regulations or internationally acknowledged standards, such as the vessel sanitation programme developed by the United States Public Health Service, which are more detailed and more stringent and apply to ships on international waters.
- (17) Risk assessment and risk management of the catchment areas for abstraction points should take a holistic approach and be geared towards reducing the level of treatment required for the production of water intended for human consumption, for instance by reducing the pressures causing the pollution, or a risk of pollution, of water bodies used for abstraction of water intended for human consumption. To that end, Member States should characterise the catchment areas of abstraction points, and identify hazards and hazardous events that could cause the quality of water to deteriorate, such as possible pollution sources associated with those catchment areas.

When necessary in light of the identification of hazards, Member States should monitor pollutants which they identify as relevant, such as nitrates, pesticides or pharmaceuticals identified under Directive 2000/60/EC, or because of their natural presence in the abstraction area, such as in the case of arsenic, or because of information from water suppliers, for example regarding a sudden increase of the concentration of a specific parameter in raw water. Where surface waters are used for water intended for human consumption, Member States should pay particular attention in their risk assessment to microplastics and endocrine-disrupting compounds, such as Nonylphenol and Beta-estradiol, and should, where necessary, require water suppliers to also monitor and, where necessary, carry out treatment for those and other parameters included in the watch list if considered a potential danger to human health. Based on the risk assessment of the catchment areas for abstraction points, management measures to prevent or control the risks identified should be taken to safeguard the quality of the water intended for human consumption. Where a Member State finds, through the identification of hazards and hazardous events, that a parameter is not present in catchment areas for abstraction points, for instance because that substance never occurs in groundwater bodies or surface water bodies, the Member State should inform the relevant water suppliers and should be able to allow them to decrease the monitoring frequency for that parameter, or to remove that parameter from the list of parameters to be monitored, without carrying out a risk assessment of the supply system.

- (18) Directive 2000/60/EC requires Member States to identify water bodies used for the abstraction of water intended for human consumption, to monitor them, and to take the necessary measures to avoid deterioration in their quality in order to reduce the level of purification treatment required in the production of water that is fit for human consumption. To avoid any duplication of obligations, Member States should, when carrying out the identification of hazards and hazardous events, use available monitoring results representative of the catchment areas, obtained under Articles 7 and 8 of Directive 2000/60/EC or other relevant Union legislation. Nevertheless, in cases where such monitoring data are not available, monitoring of relevant parameters, substances or pollutants could be put in place in order to support the characterisation of the catchment areas and assess potential risks. Such monitoring should be put in place considering local situations and pollution sources.

(19) The parametric values laid down in this Directive for the purposes of assessing the quality of water intended for human consumption are to be complied with at the point at which the water emerges from the taps that are normally used for water intended for human consumption. However, the quality of water intended for human consumption can be affected by the domestic distribution systems. The WHO notes that, in the Union, *Legionella* causes the highest health burden of all waterborne pathogens. It is transmitted by warm water systems through inhalation, for instance during showering. It is therefore clearly linked to the domestic distribution systems. Since imposing a unilateral obligation to monitor all private and public premises for this pathogen would lead to unreasonably high costs, a risk assessment of domestic distribution systems is more suited to addressing this issue. In addition, the potential risks stemming from products and materials in contact with water intended for human consumption should also be considered in that risk assessment. The risk assessment of domestic distribution systems should therefore include, *inter alia*, a focus on monitoring of priority premises, as identified by Member States, such as hospitals, healthcare institutions, retirement homes, childcare facilities, schools, educational institutions, buildings with a lodging facility, restaurants, bars, sports and shopping centres, leisure, recreational and exhibition facilities, penal institutions and campgrounds, and an assessment of the risks stemming from the domestic distribution systems and related products and materials. On the basis of the risk assessment, Member States should take all necessary measures to ensure, *inter alia*, that appropriate control and management measures are in place, for example in case of outbreaks, in line with the guidance of the WHO, and that the migration of potentially harmful substances from construction products does not endanger human health.

(20) The provisions of Directive 98/83/EC on quality assurance of treatment, equipment and materials did not succeed in creating uniform hygiene requirements for products in contact with water intended for human consumption. As a result, national product approvals are in place, with requirements differing from one Member State to another. This renders it difficult and costly for manufacturers to market their products throughout the Union and it is also costly for Member States. In addition, it makes it difficult for consumers and water suppliers to know if products meet health requirements. Establishing harmonised minimum requirements in this Directive for materials that come into contact with water intended for human consumption will contribute to reaching a uniform level of health protection throughout the Union, as well as a better functioning of the internal market. Moreover, Regulation (EU) 2019/1020 of the European Parliament and of the Council¹ lays down a general Union-wide market surveillance mechanism for products, with a view to ensuring that only compliant products that fulfil requirements providing a high level of protection of public interests, such as health and safety in general, health and safety in the workplace, the protection of consumers, the protection of the environment and public security, are made available on the Union market. That Regulation states that if new Union harmonisation legislation is adopted, it will be for that legislation to specify whether Regulation (EU) 2019/1020 is also to apply to that legislation. In order to ensure that proper market surveillance measures can be taken as regards products that are not already covered by Regulation (EU) 2019/1020 but which would be affected by this Directive, it is appropriate to provide for the application of that Regulation to those products.

¹ Regulation (EU) 2019/1020 of the European Parliament and of the Council of 20 June 2019 on market surveillance and compliance of products and amending Directive 2004/42/EC and Regulations (EC) No 765/2008 and (EU) No 305/2011 (OJ L 169, 25.6.2019, p. 1).

- (21) The nature of materials that come into contact with water intended for human consumption can have an impact on the quality of such water through the migration of potentially harmful substances, by enhancing microbial growth or by influencing the odour, colour or taste of such water. The evaluation of Directive 98/83/EC found that the provisions on quality assurance of treatment, equipment and materials provided too much legal flexibility, leading to different national approval systems across the Union for materials that come into contact with water intended for human consumption. Therefore, there is a need to establish more specific minimum hygiene requirements for materials intended to be used for the abstraction, treatment, storage or distribution of water intended for human consumption in new installations or in existing installations in the case of repair works or reconstruction, in order to ensure that they do not compromise human health either directly or indirectly, adversely affect the colour, odour or taste of the water, enhance microbial growth in the water or cause contaminants to leach into the water at levels that are higher than necessary in view of the intended purpose. For this purpose, this Directive should set out specific minimum hygiene requirements for materials, by establishing methodologies for testing and accepting starting substances, compositions and constituents, European positive lists of starting substances, compositions and constituents, methods and procedures for inclusion of starting substances, compositions or constituents in the European positive lists or reviewing their inclusion, and procedures and methods for testing and accepting final materials as used in a product made from combinations of starting substances, compositions or constituents on the European positive lists.

In order not to hamper innovation, the Commission should ensure that such procedures are proportionate, and that they do not place an undue burden on economic operators, in particular small and medium-sized enterprises. To the extent possible, these procedures should be aligned with the existing Union product legislation, in order to avoid a double burden obliging economic operators to carry out different conformity assessments for the same product.

- (22) The European positive lists are the lists of starting substances, compositions or constituents, depending on the type of materials, namely organic, cementitious, metallic, enamels and ceramic or other inorganic materials, authorised for use in the manufacture of materials, and those lists should include, where appropriate, conditions for their use and migration limits. For the inclusion of a starting substance, composition or constituent in the European positive lists, a risk assessment of the starting substance, composition or constituent itself, as well as relevant impurities and foreseeable reaction and degradation products in the intended use, should be required. The risk assessment by the applicant or national authority should cover health risks arising from the potential migration under worst foreseeable conditions of use and from the toxicity. Based on the risk assessment, the European positive lists should, if necessary, set out specifications for the starting substance, composition or constituent and restrictions of use, quantitative restrictions or migration limits for the starting substance, composition or constituent, possible impurities and reaction products or constituents in order to ensure the safety of the final material to be used in a product in contact with water intended for human consumption.

For the purpose of establishing the first European positive lists, national positive lists of starting substances, compositions and constituents or other national provisions, the methodologies that led to the establishment of such national lists and provisions, and the accompanying risk assessments for each of the starting substances, compositions and constituents should be made available to the European Chemicals Agency set up under Regulation (EC) No 1907/2006 of the European Parliament and of the Council¹ ('ECHA'). ECHA should, on that basis, recommend compiled lists to the Commission. ECHA should review and deliver an opinion on the substances, compositions and constituents on the first European positive lists in time for the Commission to review the lists by 15 years after their adoption. For the purposes of updating the European positive lists ECHA should deliver opinions on the inclusion or removal of substances, compositions or constituents.

- (23) In order to facilitate uniform testing of products for compliance with the requirements of this Directive, the Commission should request the European Committee for Standardisation (CEN) to develop standards for uniform testing and assessment of products in contact with water intended for human consumption. When establishing and updating the European positive lists, the Commission should ensure that any relevant acts, or standardisation mandates, which it adopts pursuant to other Union legislation are consistent with this Directive.

¹ Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (OJ L 396, 30.12.2006, p. 1).

- (24) Furthermore, no later than nine years after the end-date for transposition of this Directive, the functioning of the system introduced by this Directive should be reviewed in order to assess whether human health is being protected throughout the Union and whether the functioning of the internal market in terms of products in contact with water intended for human consumption using approved materials is properly protected. In addition, it should be assessed whether any further legislative proposal on the matter is needed, taking into account in particular the outcome of the evaluations of Regulations (EC) No 1935/2004¹ and (EU) No 305/2011² of the European Parliament and of the Council.

¹ Regulation (EC) No 1935/2004 of the European Parliament and of the Council of 27 October 2004 on materials and articles intended to come into contact with food and repealing Directives 80/590/EEC and 89/109/EEC (OJ L 338, 13.11.2004, p. 4).

² Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC (OJ L 88, 4.4.2011, p. 5).

(25) Products in contact with water intended for human consumption should consist of a material, or a combination of materials, approved in accordance with this Directive. However, this Directive only addresses the health and hygiene aspects of materials and substances used in products with regard to their impact on the quality of water intended for human consumption, and the rules for conformity testing and quality control of the final products. It does not address other requirements, such as rules on how to express the performance of products or rules on structural safety, which may be regulated by or stem from Union harmonisation legislation, such as Regulation (EU) No 305/2011 or Regulation (EU) 2016/426 of the European Parliament and of the Council¹. The coexistence of health and hygiene risk aspects harmonised under this Directive and safety or other risk aspects addressed under Union harmonisation legislation would not create any conflicts, provided that there were no overlap in the risks respectively covered. A potential conflict between Regulation (EU) No 305/2011 and this Directive exists, given that the avoidance of the release of dangerous substances into drinking water or substances which have an otherwise negative impact on drinking water is listed in Annex I to Regulation (EU) No 305/2011 as one of the basic requirements for construction works. However, this overlap will not materialise if no standardisation mandate is issued under Regulation (EU) No 305/2011 concerning the health and hygiene aspects of products in contact with water intended for human consumption.

¹ Regulation (EU) 2016/426 of the European Parliament and of the Council of 9 March 2016 on appliances burning gaseous fuels and repealing Directive 2009/142/EC (OJ L 81, 31.3.2016, p. 99).

- (26) There is a need to ensure effective decision-making, coordination and management at Union level of the technical, scientific and administrative aspects of this Directive related to materials that come into contact with water intended for human consumption. ECHA should carry out tasks specified in this Directive with regard to the evaluation of substances and compositions for materials that come into contact with water intended for human consumption. Consequently, the Committee for Risk Assessment of ECHA set up pursuant to point (c) of Article 76(1) of Regulation (EC) No 1907/2006 should facilitate the carrying out of certain tasks conferred on ECHA by this Directive by providing opinions.
- (27) Treatment chemicals and filter media could be used to treat raw water in order to provide water which is suitable for human consumption. However, treatment chemicals and filter media can present risks to the safety of water intended for human consumption. Therefore, procedures for the treatment and disinfection of water intended for human consumption should ensure the use of treatment chemicals and filter media that are effective, safe and properly managed to avoid adverse effects on consumer health. Treatment chemicals and filter media therefore need to be assessed with regard to their characteristics, hygiene requirements and purity, and should not be used more than necessary to avoid risks for human health. Treatment chemicals and filter media should not enhance microbial growth except where it is intended, such as for enhancement of microbial denitrification.

Member States should guarantee the quality assurance of treatment chemicals and filter media without prejudice to Regulation (EU) No 528/2012 of the European Parliament and of the Council¹ and by using existing European standards when available. It is essential to ensure that each product, as well as containers of chemical reagents and filter media, in contact with water intended for human consumption bears clearly legible and indelible marking when placed on the market, informing consumers, water suppliers, installers, authorities and regulators that the item is fit for use in contact with water intended for human consumption. Moreover, in accordance with Regulation (EU) No 528/2012, Member States are allowed to restrict or ban the use of biocidal products in the supply of drinking water to the public, including in individual supplies.

- (28) With the aim of minimising the potential presence of lead content in water intended for human consumption, components made of lead in domestic distribution systems can be substituted, in particular in the event of repair or reconstruction works in existing installations. These components should be substituted by materials which comply with the minimum requirements for materials that come into contact with water intended for human consumption, as established by this Directive. In order to accelerate that process, Member States should consider and, where relevant, take measures for the substitution of components made of lead in existing domestic distribution systems, if economically and technically feasible.

¹ Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products (OJ L 167, 27.6.2012, p. 1).

- (29) Each Member State should ensure that monitoring programmes are established to check that water intended for human consumption meets the requirements of this Directive. Most of the monitoring to be carried out for the purposes of this Directive will be performed by water suppliers. A certain flexibility should be granted to water suppliers as regards the parameters they monitor for the purposes of risk assessment and risk management of the supply system. If a parameter is not detected, water suppliers should be able to decrease the monitoring frequency or to stop monitoring that parameter altogether. Risk assessment and risk management of the supply system should be carried out for most parameters. However, core parameters should always be monitored at a specified minimum frequency. This Directive mainly sets provisions on monitoring frequency for the purposes of compliance checks, with only limited provisions on monitoring for operational purposes. Additional monitoring for operational purposes could be necessary to ensure the correct functioning of water treatment. Such additional monitoring should be performed at the discretion of water suppliers. In that regard, water suppliers could refer to the WHO Guidelines and Water Safety Plan Manual.
- (30) The risk-based approach should be applied by all water suppliers, including small water suppliers, as the evaluation of Directive 98/83/EC showed deficiencies in its implementation by those suppliers, which were sometimes due to the cost of performing unnecessary monitoring operations. When applying the risk-based approach, security concerns should be taken into account.

- (31) In the event of non-compliance with the requirements imposed by this Directive, the Member State concerned should investigate the cause immediately and ensure that the necessary remedial action is taken as soon as possible to restore the quality of the water supplied. In cases where the water supply constitutes a potential danger to human health, the supply of such water should be prohibited or its use restricted. In addition, in the event of failure to meet the minimum requirements for values relating to microbiological and chemical parameters, Member States should consider the failure as a potential danger to human health, except where the non-compliance is considered trivial. In cases where remedial action is necessary to restore the quality of water intended for human consumption, in accordance with Article 191(2) of the Treaty on the Functioning of the European Union (TFEU), priority should be given to action which rectifies the problem at source.
- (32) Member States should be authorised, under certain conditions and in duly justified circumstances, to continue to grant derogations from this Directive and in this regard it is necessary to establish a proper framework for such derogations, provided that they do not constitute a potential danger to human health and provided that the supply of water intended for human consumption in the area concerned cannot be maintained by any other reasonable means. Those derogations should be limited to specific cases. Derogations granted by Member States pursuant to Directive 98/83/EC and still applicable at the end-date for transposition of this Directive should continue to apply until the end of the derogation and renewed under this Directive only where a second derogation has not yet been granted.

(33) The Commission, in its communication of 19 March 2014 on the European Citizens' Initiative 'Water and sanitation are a human right! Water is a public good, not a commodity!', invited Member States to ensure access to a minimum water supply for all citizens, in accordance with the WHO recommendations. It also committed to continue to 'improve access to safe drinking water [...] for the whole population through environmental policies'. This is in line with UN SDG 6 and the associated target to 'achieve universal and equitable access to safe and affordable drinking water for all'. To address the aspects of access to water which are related to quality and availability and as part of the reply to the Right2Water initiative, and to contribute to the implementation of Principle 20 of the European Pillar of Social Rights that states that 'everyone has the right to access essential services of good quality, including water', Member States should tackle the issue of access to water at national level whilst enjoying some discretion as to the exact type of measures to be implemented. This should be done through actions aimed at improving access to water intended for human consumption for all, in particular by setting up outdoor and indoor equipment in public spaces where technically feasible, as well as through actions aimed at promoting the use of tap water, for example by encouraging the free provision of water intended for human consumption in public administrations and public buildings or, for free or for a low service fee, for customers in restaurants, canteens and catering services.

(34) The Union and the Member States have committed themselves, within their respective competences, to achieving the SDGs, whilst recognising the primary responsibility of Member States in the follow-up and review, at national, regional and global levels, of progress towards those goals. Some of the SDGs and the right to water do not fall within the Union's environment policy or the Union's social policy, which is limited and complementary in nature. Whilst bearing in mind the limits of Union competence, it is nevertheless appropriate to ensure that Member States' continued commitment to the right to water is in accordance with this Directive, whilst respecting the principle of subsidiarity. In this regard, Member States currently undertake considerable efforts to improve access to water intended for human consumption. In addition, the United Nations Economic Commission for Europe (UNECE) and WHO Regional Office for Europe's Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes, to which many Member States are also Parties, aims to protect human health through better water management and by reducing water-related diseases. Member States could make use of the guidance documents developed under the remit of that Protocol to assess the policy background and the baseline situation on access to water and to define the actions necessary to improve equitable access for all to water intended for human consumption.

(35) The European Parliament, in its resolution of 8 September 2015 on the follow-up to the European citizens' initiative Right2Water¹, requested that Member States pay special attention to the needs of vulnerable groups in society. The specific situation of minority cultures, such as Roma and Travellers, whether sedentary or not, and in particular their lack of access to water intended for human consumption, was also acknowledged in the communication of the Commission of 2 April 2014 'Report on the implementation of the EU Framework for National Roma Integration Strategies' and the Council Recommendation of 9 December 2013 on effective Roma integration measures in the Member States. In light of that general context, it is appropriate that Member States pay particular attention to vulnerable and marginalised groups by taking the necessary measures to improve access to water intended for human consumption for those groups. Without prejudice to the right of the Member States to define those groups, it would be important that such groups include refugees, nomadic communities, homeless people and minority cultures such as Roma and Travellers, whether sedentary or not. Such measures to improve access, left to the appreciation of the Member States, might, for example, include providing alternative supply systems, such as individual treatment devices, providing water through the use of tankers, such as trucks and cisterns, and ensuring the necessary infrastructure for camps.

¹ OJ C 316, 22.9.2017, p. 99.

- (36) In order to make consumers more aware of the implications of water consumption, they should receive information in an easily accessible manner, for instance on their invoices or by smart application, on the volume consumed per year, changes in consumption, a comparison with average household consumption where such information is available to the water supplier, as well as on the price per litre of water intended for human consumption, thereby allowing a comparison with the price of bottled water.
- (37) The 7th Environment Action Programme to 2020 ‘Living well, within the limits of our planet’¹, requires that the public have access to clear environmental information at national level. Directive 98/83/EC only provided for passive access to information, meaning that Member States merely had to ensure that information was available. Those provisions should therefore be replaced to ensure that up-to-date information is accessible to consumers on-line, in a user-friendly and customised way. Consumers should also be able to request access to this information by other means, upon justified request.

¹ Decision No 1386/2013/EU of the European Parliament and of the Council of 20 November 2013 on a General Union Environment Action Programme to 2020 ‘Living well, within the limits of our planet’ (OJ L 354, 28.12.2013, p. 171).

- (38) The up-to-date information to be provided under this Directive should include results from monitoring programmes, information on types of water treatment and disinfection applied, information on exceedance of the parametric values relevant for human health, relevant information on risk assessment and risk management of the supply system, advice on how to reduce water consumption and avoid health risks due to stagnant water, but also additional information that the public could find useful, such as information on indicators such as iron, hardness and minerals, which often influence consumers' perceptions of tap water. In addition, as a response to consumer interest in water issues, consumers should be given access, upon request, to available historical data on monitoring results and exceedances.
- (39) In relation to water suppliers supplying at least 10 000 m³ per day or serving at least 50 000 people, additional information on, *inter alia*, performance efficiency, leakage rates, ownership structure and tariff structure should also be available to consumers on-line.
- (40) The purpose of better consumer knowledge of relevant information and improved transparency should be to increase citizens' confidence in the water supplied to them, as well as in water services, and should lead to an increased use of tap water as drinking water, which could contribute to reduced plastic usage and litter and greenhouse gas emissions, and a positive impact on climate change mitigation and the environment as a whole.

- (41) With the improvement of monitoring techniques, leakage rates have become increasingly apparent. To improve the efficiency of water infrastructure including avoiding over-exploitation of scarce resources of water intended for human consumption, water leakage levels should be assessed by all Member States and reduced if they are above a certain threshold.
- (42) Directive 2003/4/EC of the European Parliament and of the Council¹ is aimed at guaranteeing the right of access to environmental information in the Member States in line with the 1998 Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters² ('Aarhus Convention'). The Aarhus Convention encompasses broad obligations related both to making environmental information available upon request and actively disseminating such information. Directive 2007/2/EC of the European Parliament and of the Council³ is also of broad scope, covering the sharing of spatial information, including data-sets on different environmental topics. It is important that provisions of this Directive related to access to information and data-sharing arrangements complement those Directives and do not create a separate legal regime. Therefore, the provisions of this Directive regarding information to the public and information on monitoring of implementation should be without prejudice to Directives 2003/4/EC and 2007/2/EC.

¹ Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information and repealing Council Directive 90/313/EEC (OJ L 41, 14.2.2003, p. 26).

² OJ L 124, 17.5.2005, p. 4.

³ Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE) (OJ L 108, 25.4.2007, p. 1).

- (43) Directive 98/83/EC did not set out reporting obligations for small water suppliers. To remedy this, and to address the need for implementation and compliance information, a new system should be introduced in this Directive whereby Member States are required to set up, keep up-to-date and make accessible to the Commission and the European Environment Agency ('the EEA') data sets containing only relevant data, such as exceedances of parametric values and incidents of a certain significance. This should ensure that the administrative burden on all entities remains as limited as possible. To ensure that the appropriate infrastructure for public access, reporting and data-sharing between public authorities exists, Member States should base the data specifications on Directive 2007/2/EC and its implementing acts.
- (44) Data reported by Member States are not only necessary for the purposes of compliance checking but are also essential to enable the Commission to monitor and assess this Directive in relation to the objectives it pursues in order to inform any future evaluation of this Directive in accordance with paragraph 22 of the Interinstitutional Agreement of 13 April 2016 on Better Law-Making¹. In that context, there is a need for relevant data that will allow better assessment of the efficiency, effectiveness, relevance, and Union value added of this Directive, hence the necessity to ensure that appropriate reporting mechanisms exist that can also serve as indicators for future evaluations of this Directive.

¹ OJ L 123, 12.5.2016, p. 1.

- (45) Pursuant to paragraph 22 of the Interinstitutional Agreement on Better Law-Making, the Commission should carry out an evaluation of this Directive within a certain period of time from the date set for its transposition. That evaluation should be based on experience gained and data collected during the implementation of this Directive, on any available WHO recommendations, and on relevant scientific, analytical and epidemiological data.
- (46) This Directive respects the fundamental rights and observes the principles recognised by the Charter of Fundamental Rights of the European Union. In particular, this Directive seeks to promote the principles relating to health care, access to services of general economic interest, environmental protection and consumer protection.
- (47) The effectiveness of this Directive and its aim of protecting human health in the context of the Union's environment policy require that natural or legal persons, or where appropriate their duly constituted organisations, be able to rely on it in legal proceedings and that the national courts be able to take this Directive into consideration as an element of Union law in order, *inter alia*, to review decisions of a national authority where appropriate. In addition, according to settled case-law of the Court of Justice, under the principle of sincere cooperation laid down in Article 4(3) of the Treaty on European Union (TEU), it is for the courts of the Member States to ensure judicial protection of a person's rights under Union law. Furthermore, Article 19(1) TEU requires Member States to provide remedies sufficient to ensure effective judicial protection in the fields covered by Union law.

This applies particularly in respect of a Directive which has the objective of protecting human health from the adverse effects of any contamination of water intended for human consumption. In addition, in accordance with the Aarhus Convention, members of the public concerned should have access to justice in order to contribute to the protection of the right to live in an environment which is adequate for personal health and well-being. By Council Decision (EU) 2018/881¹, the Commission was requested to carry out a study by 30 September 2019 and, if appropriate in light of the study, to submit by 30 September 2020 a proposal to amend Regulation (EC) No 1367/2006 of the European Parliament and of the Council² in order to address the findings of the Aarhus Convention Compliance Committee in case ACCC/C/2008/32. The Commission submitted the study by that deadline and stated, in its Communication of 11 December 2019 on the European Green Deal, that it ‘will consider revising the Aarhus Regulation to improve access to administrative and judicial review at EU level for citizens and NGOs who have concerns about the legality of decisions with effects on the environment’. It is important that the Commission also take action to improve access to justice by citizens and NGOs before national courts in all Member States.

¹ Council Decision (EU) 2018/881 of 18 June 2018 requesting the Commission to submit a study on the Union’s options for addressing the findings of the Aarhus Convention Compliance Committee in case ACCC/C/2008/32 and, if appropriate in view of the outcomes of the study, a proposal for a Regulation of the European Parliament and of the Council amending Regulation (EC) No 1367/2006 (OJ L 155, 19.6.2018, p. 6).

² Regulation (EC) No 1367/2006 of the European Parliament and of the Council of 6 September 2006 on the application of the provisions of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters to Community institutions and bodies (OJ L 264, 25.9.2006, p. 13).

(48) In order to adapt this Directive to scientific and technical progress, the power to adopt acts in accordance with Article 290 TFEU should be delegated to the Commission in respect of setting a threshold for leakages, determining the conformity assessment procedure for products in contact with water intended for human consumption, laying down a procedure for applications to ECHA to include in or remove from the European positive lists starting substances, compositions or constituents, establishing a marking for products in contact with water, adopting a methodology to measure microplastics, amending Annex III and amending the parametric value for Bisphenol A in Part B of Annex I. It is of particular importance that the Commission carry out appropriate consultations during its preparatory work, including at expert level, and that those consultations be conducted in accordance with the principles laid down in the Interinstitutional Agreement on Better Law-Making. In particular, to ensure equal participation in the preparation of delegated acts, the European Parliament and the Council receive all documents at the same time as Member States' experts, and their experts systematically have access to meetings of Commission expert groups dealing with the preparation of delegated acts. In addition, the empowerment laid down in Note 10 of Part C of Annex I to Directive 98/83/EC, to set monitoring frequencies and monitoring methods for radioactive substances, has become obsolete due to the adoption of Council Directive 2013/51/Euratom¹ and should therefore be deleted. The empowerment laid down in the second subparagraph of Part A of Annex III to Directive 98/83/EC concerning amendments of the Directive is no longer necessary and should be deleted.

¹ Council Directive 2013/51/Euratom of 22 October 2013 laying down requirements for the protection of the health of the general public with regard to radioactive substances in water intended for human consumption (OJ L 296, 7.11.2013, p. 12).

- (49) In order to ensure uniform conditions for the implementation of this Directive, implementing powers should be conferred on the Commission for the adoption of methodologies for testing and accepting starting substances, compositions and constituents, of European positive lists of starting substances, compositions and constituents and of procedures and methods for testing and accepting final materials made from those starting substances, compositions and constituents. Implementing powers should also be conferred on the Commission for the adoption of the format of, and modalities for presenting, the information to be provided by Member States and compiled by the EEA on the implementation of this Directive, as well as to establish and update a watch list. Those powers should be exercised in accordance with Regulation (EU) No 182/2011 of the European Parliament and of the Council¹.
- (50) Without prejudice to Directive 2008/99/EC of the European Parliament and of the Council², Member States should lay down rules on penalties applicable to infringements of national provisions adopted pursuant to this Directive and should take all measures necessary to ensure that they are implemented. The penalties should be effective, proportionate and dissuasive.

¹ Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by Member States of the Commission's exercise of implementing powers (OJ L 55, 28.2.2011, p. 13).

² Directive 2008/99/EC of the European Parliament and of the Council of 19 November 2008 on the protection of the environment through criminal law (OJ L 328, 6.12.2008, p. 28).

- (51) In order for water suppliers to have a full set of data available when they start carrying out the risk assessment and risk management of the supply system, a transition period of three years should be introduced for new parameters. This will allow Member States to carry out the identification of hazards and hazardous events during those first three years after the end-date for transposition of this Directive, and to provide data to water suppliers on the new parameters, thereby avoiding any unnecessary monitoring by water suppliers if it is found that a parameter does not need to be monitored further to the first identification of hazards and hazardous events. During those initial three years, water suppliers should nevertheless carry out the risk assessment of the supply system, or use existing risk assessments already carried out under Directive (EU) 2015/1787, for those parameters that were part of Annex I to Directive 98/83/EC, given that data will already be available for those parameters when this Directive enters into force.
- (52) Directive 2013/51/Euratom lays down specific arrangements for the monitoring of radioactive substances in water intended for human consumption. Therefore, this Directive should not set out parametric values on radioactivity.

- (53) Since the objectives of this Directive, namely to protect human health and to improve access to water intended for human consumption, cannot be sufficiently achieved by the Member States but can rather, by reason of the scale and effects of the action, be better achieved at Union level, the Union may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 TEU. In accordance with the principle of proportionality as set out in that Article, this Directive does not go beyond what is necessary in order to achieve those objectives.
- (54) The obligation to transpose this Directive into national law should be confined to those provisions which represent a substantive amendment as compared to the earlier Directives. The obligation to transpose the provisions which are unchanged arises under the earlier Directives.
- (55) This Directive should be without prejudice to the obligations of the Member States relating to the time-limits for the transposition into national law of the Directives set out in Part B of Annex VI,

HAVE ADOPTED THIS DIRECTIVE:

Article 1
Objectives

1. This Directive concerns the quality of water intended for human consumption for all in the Union.
2. The objectives of this Directive are to protect human health from the adverse effects of any contamination of water intended for human consumption by ensuring that it is wholesome and clean, and to improve access to water intended for human consumption.

Article 2
Definitions

For the purposes of this Directive, the following definitions apply:

- (1) ‘water intended for human consumption’ means:
 - (a) all water, either in its original state or after treatment, intended for drinking, cooking, food preparation or other domestic purposes in both public and private premises, regardless of its origin and whether it is supplied from a distribution network, supplied from a tanker or put into bottles or containers, including spring waters;
 - (b) all water used in any food business for the manufacture, processing, preservation or marketing of products or substances intended for human consumption;

- (2) ‘domestic distribution system’ means the pipework, fittings and appliances which are installed between the taps that are normally used for water intended for human consumption in both public and private premises and the distribution network, but only if they are not the responsibility of the water supplier, in its capacity as a water supplier, under the relevant national law;
- (3) ‘water supplier’ means an entity supplying water intended for human consumption;
- (4) ‘priority premises’ means large non-household premises with many users potentially exposed to water-related risks, in particular large premises for public use, as identified by Member States;
- (5) ‘food business’ means a food business as defined in point (2) of Article 3 of Regulation (EC) No 178/2002;
- (6) ‘food business operator’ means a food business operator as defined in point (3) of Article 3 of Regulation (EC) No 178/2002;
- (7) ‘hazard’ means a biological, chemical, physical or radiological agent in water, or another aspect of the condition of water, with the potential to cause harm to human health;
- (8) ‘hazardous event’ means an event that introduces hazards into, or fails to remove them from, the supply system of water intended for human consumption;

- (9) ‘risk’ means a combination of the likelihood of a hazardous event and the severity of the consequences if the hazard and hazardous event occur in the supply system of water intended for human consumption;
- (10) ‘starting substance’ means a substance that has been intentionally added in the production of organic materials or of admixtures for cementitious materials;
- (11) ‘composition’ means the chemical composition of a metal, enamel, ceramic or other inorganic material.

Article 3

Exemptions

1. This Directive shall not apply to:
 - (a) natural mineral waters recognised as such by the responsible authority, as referred to in Directive 2009/54/EC; or
 - (b) waters which are medicinal products within the meaning of Directive 2001/83/EC.
2. Maritime vessels that desalinate water, carry passengers and act as water suppliers shall only be subject to Articles 1 to 6 and Articles 9, 10, 13 and 14 of this Directive and its relevant Annexes.

3. Member States may exempt from this Directive:
 - (a) water intended exclusively for those purposes for which the competent authorities are satisfied that the quality of the water has no influence, either directly or indirectly, on the health of the consumers concerned;
 - (b) water intended for human consumption from an individual supply providing less than 10 m³ a day as an average or serving fewer than 50 persons, unless the water is supplied as part of a commercial or public activity.
4. Member States that have recourse to the exemptions provided for in point (b) of paragraph 3 shall ensure that the population concerned is informed of such recourse to exemptions and of any action that can be taken to protect human health from the adverse effects resulting from any contamination of water intended for human consumption. In addition, where a potential danger to human health arising from the quality of such water is apparent, the population concerned shall promptly be given appropriate advice.
5. Member States may exempt food business operators from this Directive, as regards the water used for the specific purposes of the food business, if the competent national authorities are satisfied that the quality of such water cannot affect the safety of the foodstuff in its finished form and provided that the water supply of the food business complies with relevant obligations, in particular under the procedures on hazard analysis and critical control point principles and remedial actions under relevant Union legislation on food.

Member States shall ensure that producers of water intended for human consumption that is put into bottles or containers comply with Articles 1 to 5 and Parts A and B of Annex I.

However, the minimum requirements set out in Part A of Annex I shall not apply to spring water as referred to in Directive 2009/54/EC.

6. Water suppliers supplying less than 10 m³ a day as an average or serving fewer than 50 persons as part of a commercial or public activity shall only be subject to Articles 1 to 6 and Articles 13, 14 and 15 of this Directive and its relevant Annexes.

Article 4

General obligations

1. Without prejudice to their obligations under other Union law, Member States shall take the measures necessary to ensure that water intended for human consumption is wholesome and clean. For the purposes of the minimum requirements of this Directive, water intended for human consumption shall be wholesome and clean if all the following requirements are met:
 - (a) that water is free from any micro-organisms and parasites and from any substances which, in numbers or concentrations, constitute a potential danger to human health;
 - (b) that water meets the minimum requirements set out in Parts A, B and D of Annex I;

(c) Member States have taken all other measures necessary to comply with Articles 5 to 14.

2. Member States shall ensure that the measures taken to implement this Directive are based on the precautionary principle and in no circumstances have the effect of allowing, directly or indirectly, any deterioration of the present quality of water intended for human consumption or any increase in the pollution of waters used for the production of water intended for human consumption.
3. In accordance with Directive 2000/60/EC, Member States shall ensure that an assessment of water leakage levels within their territory and of the potential for improvements in water leakage reduction is performed using the infrastructural leakage index (ILI) rating method or another appropriate method. That assessment shall take into account relevant public health, environmental, technical and economic aspects and cover at least water suppliers supplying at least 10 000 m³ per day or serving at least 50 000 people.

The results of the assessment shall be communicated to the Commission by... [three years after the end-date for transposition of this Directive].

By... [five years after the end-date for transposition of this Directive], the Commission shall adopt a delegated act in accordance with Article 21 in order to supplement this Directive, by setting out a threshold, based on ILI or another appropriate method, above which Member States shall present an action plan. That delegated act shall be drafted using the Member States' assessments and the Union average leakage rate determined on the basis of those assessments.

Within two years of the adoption of the delegated act referred to in the third subparagraph, Member States having a leakage rate exceeding the threshold set out in the delegated act shall present an action plan to the Commission laying down a set of measures to be taken in order to reduce their leakage rate.

Article 5

Quality standards

1. Member States shall set values applicable to water intended for human consumption for the parameters set out in Annex I.
2. The parametric values set pursuant to paragraph 1 of this Article shall not be less stringent than those set out in Parts A, B, C and D of Annex I. As regards the parameters set out in Part C of Annex I, the values shall be set only for monitoring purposes and for the sake of ensuring that the requirements set out in Article 14 are met.
3. A Member State shall set values for additional parameters not included in Annex I, where the protection of human health within its national territory or part of it so requires. The values set shall, as a minimum, satisfy the requirements of point (a) of Article 4(1).

Article 6
Point of compliance

1. The parametric values set in accordance with Article 5 for the parameters listed in Parts A and B of Annex I shall be complied with:
 - (a) in the case of water intended for human consumption supplied from a distribution network, at the point, within premises or an establishment, at which the water emerges from the taps that are normally used for water intended for human consumption;
 - (b) in the case of water intended for human consumption supplied from a tanker, at the point at which the water emerges from the tanker;
 - (c) in the case of water intended for human consumption put into bottles or containers, at the point at which the water is put into the bottles or containers;
 - (d) in the case of water intended for human consumption used in a food business, at the point at which the water is used in that business.

2. In the case of water intended for human consumption covered by point (a) of paragraph 1 of this Article, Member States shall be deemed to have fulfilled their obligations under this Article and under Article 4 and Article 14(2) where it can be established that non-compliance with the parametric values set in accordance with Article 5 is due to the domestic distribution system or the maintenance thereof, without prejudice to Article 10 as regards priority premises.

3. Where paragraph 2 of this Article applies and there is a risk that water intended for human consumption covered by point (a) of paragraph 1 of this Article would not comply with the parametric values set in accordance with Article 5, Member States shall nevertheless ensure that:
 - (a) appropriate measures are taken to reduce or eliminate the risk of non-compliance with the parametric values, such as advising property owners of any possible remedial action they could take, and if necessary that other measures, such as appropriate treatment techniques, are taken to change the nature or properties of the water before it is supplied so as to reduce or eliminate the risk of the water not complying with the parametric values after supply; and
 - (b) the consumers concerned are duly informed and advised of any possible additional remedial action that they should take.

Article 7

Risk-based approach to water safety

1. Member States shall ensure that the supply, treatment and distribution of water intended for human consumption is subject to a risk-based approach that covers the whole supply chain from the catchment area, abstraction, treatment, storage and distribution of water to the point of compliance specified in Article 6.

The risk-based approach shall entail the following elements:

- (a) risk assessment and risk management of the catchment areas for abstraction points of water intended for human consumption in accordance with Article 8;
 - (b) risk assessment and risk management for each supply system that includes the abstraction, treatment, storage and distribution of water intended for human consumption to the point of supply carried out by the water suppliers in accordance with Article 9; and
 - (c) risk assessment of the domestic distribution systems in accordance with Article 10.
2. Member States may adapt the implementation of the risk-based approach, without compromising the objective of this Directive concerning the quality of water intended for human consumption and the health of consumers, when there are particular constraints due to geographical circumstances such as remoteness or limited accessibility of the water supply zone.
 3. Member States shall ensure that there is a clear and appropriate distribution of responsibilities between stakeholders, as defined by the Member States, for the implementation of the risk-based approach. Such distribution of responsibilities shall be tailored to their institutional and legal framework.

4. The risk assessment and risk management of the catchment areas for abstraction points of water intended for human consumption shall be carried out for the first time by ... [four years and six months after the end-date for transposition of this Directive]. That risk assessment and risk management shall be reviewed at regular intervals of no longer than six years, taking account of the requirements provided for in Article 7 of Directive 2000/60/EC, and updated where necessary.
5. The risk assessment and risk management of the supply system shall be carried out for the first time by ... [six years after the end-date for transposition of this Directive]. That risk assessment and risk management shall be reviewed at regular intervals of no longer than six years, and updated where necessary.
6. The risk assessment of the domestic distribution systems shall be carried out for the first time by ... [six years after the end-date for transposition of this Directive]. That risk assessment shall be reviewed every six years, and updated where necessary.
7. The deadlines specified in paragraphs 4, 5 and 6 shall not prevent Member States from ensuring that measures are taken as soon as possible once risks are identified and assessed.

Article 8

*Risk assessment and risk management of the catchment areas
for abstraction points of water intended for human consumption*

1. Without prejudice to Articles 4 to 8 of Directive 2000/60/EC, Member States shall ensure that risk assessment and risk management of the catchment areas for abstraction points of water intended for human consumption is carried out.
2. Member States shall ensure that the risk assessment includes the following elements:
 - (a) characterisation of the catchment areas for abstraction points including:
 - (i) identification and mapping of the catchment areas for abstraction points;
 - (ii) mapping of the safeguard zones, where those zones have been established in accordance with Article 7(3) of Directive 2000/60/EC;
 - (iii) geo-references for all abstraction points in the catchment areas; given that those data are potentially sensitive, in particular in the context of public health and public security, the Member States shall ensure that such data are protected and communicated only to the relevant authorities and water suppliers;
 - (iv) description of land-use, runoff, and recharge processes in the catchment areas for abstraction points;

- (b) identification of hazards and hazardous events in the catchment areas for abstraction points and an assessment of the risk they could pose to the quality of water intended for human consumption; that assessment shall assess potential risks that might cause deterioration of the water quality to the extent that it could constitute a risk to human health;
- (c) appropriate monitoring in surface water or groundwater, or both, in the catchment areas for abstraction points, or in raw water, of relevant parameters, substances or pollutants selected from the following:
 - (i) parameters in Parts A and B of Annex I or set in accordance with Article 5(3) of this Directive;
 - (ii) groundwater pollutants in Annex I to Directive 2006/118/EC of the European Parliament and of the Council¹, and pollutants and indicators of pollution for which threshold values have been established by Member States in accordance with Annex II to that Directive;
 - (iii) priority substances and certain other pollutants in Annex I to Directive 2008/105/EC of the European Parliament and of the Council²;

¹ Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration (OJ L 372, 27.12.2006, p. 19).

² Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards in the field of water policy, amending and subsequently repealing Council Directives 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and of the Council (OJ L 348, 24.12.2008, p. 84).

- (iv) river basin specific pollutants established by Member States in accordance with Directive 2000/60/EC;
- (v) other pollutants relevant for water intended for human consumption established by Member States on the basis of the information collected in accordance with point (b) of this subparagraph;
- (vi) naturally occurring substances that could constitute a potential danger for human health through use of water intended for human consumption;
- (vii) substances and compounds included in the watch list as established in accordance with Article 13(8) of this Directive.

For the purposes of point (a) of the first subparagraph, Member States may use information collected in accordance with Articles 5 and 7 of Directive 2000/60/EC.

For the purposes of point (b) of the first subparagraph, Member States may use the review of the impact of human activity undertaken in accordance with Article 5 of Directive 2000/60/EC and information on significant pressures collected in accordance with points 1.4, 1.5 and 2.3 to 2.5 of Annex II to that Directive.

Member States shall select from points (c)(i) to (c)(vii) of the first subparagraph the parameters, substances or pollutants that are considered relevant for monitoring in light of the hazards and hazardous events identified under point (b) of the first subparagraph or in light of the information provided by the water suppliers in accordance with paragraph 3.

For the purpose of appropriate monitoring as referred to in point (c) of the first subparagraph, including to detect new substances that are harmful to human health through use of water intended for human consumption, Member States may use the monitoring performed in accordance with Articles 7 and 8 of Directive 2000/60/EC or other Union legislation and relevant to the catchment areas for abstraction points.

3. Water suppliers that perform monitoring in the catchment areas for abstraction points or in raw water shall be required to inform the competent authorities of trends in, and of unusual numbers or concentrations of, monitored parameters, substances or pollutants.
4. On the basis of the outcome of the risk assessment carried out in accordance with paragraph 2, Member States shall ensure that the following risk management measures to prevent or control the risks identified are taken as relevant, starting with the preventive measures:
 - (a) defining and implementing preventive measures in the catchment areas for abstraction points in addition to the measures foreseen or taken in accordance with point (d) of Article 11(3) of Directive 2000/60/EC, where required to safeguard the quality of the water intended for human consumption; where appropriate, those preventive measures shall be included in the programmes of measures referred to in Article 11 of that Directive; where appropriate, Member States shall ensure that polluters, in cooperation with water suppliers and other relevant stakeholders, take such preventive measures in accordance with Directive 2000/60/EC;

- (b) defining and implementing mitigation measures in the catchment areas for abstraction points in addition to the measures foreseen or taken in accordance with point (d) of Article 11(3) of Directive 2000/60/EC, where required to safeguard the quality of the water intended for human consumption; where appropriate, those mitigation measures shall be included in the programmes of measures referred to in Article 11 of that Directive; where appropriate, Member States shall ensure that polluters, in cooperation with water suppliers and other relevant stakeholders, take such mitigation measures accordance with Directive 2000/60/EC;
- (c) ensuring appropriate monitoring of parameters, substances or pollutants in surface water or groundwater, or both, in the catchment areas for abstraction points, or in raw water, that could constitute a risk to human health through water consumption or lead to unacceptable deterioration of the quality of water intended for human consumption and that have not been taken into consideration in the monitoring performed in accordance with Articles 7 and 8 of Directive 2000/60/EC; where appropriate, this monitoring shall be included in the monitoring programmes referred to in Article 8 of that Directive;
- (d) evaluation of the need to establish or adapt safeguard zones for groundwater and surface water, as referred to in Article 7(3) of Directive 2000/60/EC, and any other relevant zones.

Member States shall ensure that the effectiveness of any measures referred to in this paragraph is reviewed at appropriate intervals.

5. Member States shall ensure that water suppliers and competent authorities have access to the information referred to in paragraphs 2 and 3. In particular relevant water suppliers shall have access to the monitoring results obtained under point (c) of the first subparagraph of paragraph 2.

On the basis of the information referred to in paragraphs 2 and 3, Member States may:

- (a) require water suppliers to perform additional monitoring or treatment of certain parameters;
- (b) allow water suppliers to decrease the monitoring frequency of a parameter, or to remove a parameter from the list of parameters to be monitored by the water supplier in accordance with point (a) of Article 13(2), without being required to carry out a risk assessment of the supply system, provided that:
 - (i) the parameter is not a core parameter within the meaning of point 1 of Part B of Annex II, and
 - (ii) no factor that can be reasonably anticipated is likely to cause deterioration of the quality of water intended for human consumption.

6. Where a water supplier is allowed to decrease the monitoring frequency or remove a parameter from the list of parameters to be monitored, as referred to in point (b) of the second subparagraph of paragraph 5, Member States shall ensure that appropriate monitoring of those parameters is performed when reviewing the risk assessment and risk management of the catchment areas for abstraction points, in accordance with Article 7(4).

Article 9

Risk assessment and risk management of the supply system

1. Member States shall ensure that risk assessment and risk management of the supply system are carried out by the water supplier.
2. Member States shall ensure that the risk assessment of the supply system:
 - (a) takes into account the results of the risk assessment and risk management of the catchment areas for abstraction points carried out in accordance with Article 8;
 - (b) includes a description of the supply system from the abstraction point, treatment, storage and distribution of water to the point of supply; and
 - (c) identifies the hazards and hazardous events in the supply system and includes an assessment of the risks they could pose to human health through use of water intended for human consumption, taking into consideration risks stemming from climate change, leakages and leaking pipes.

3. On the basis of the outcome of the risk assessment carried out in accordance with paragraph 2, Member States shall ensure that the following risk management measures are taken:
- (a) defining and implementing control measures for the prevention and mitigation of the risks identified in the supply system that could compromise the quality of water intended for human consumption;
 - (b) defining and implementing control measures in the supply system in addition to the measures foreseen or taken in accordance with Article 8(4) of this Directive or Article 11(3) of Directive 2000/60/EC for the mitigation of risks coming from the catchment areas for abstraction points that could compromise the quality of water intended for human consumption;
 - (c) implementing a supply-specific operational monitoring programme in accordance with Article 13;
 - (d) ensuring that, where disinfection forms part of the preparation or distribution of water intended for human consumption, the efficiency of the disinfection applied is validated, that any contamination from disinfection by-products is kept as low as possible without compromising the disinfection, that any contamination from treatment chemicals is kept as low as possible and that any substances remaining in the water do not compromise the fulfillment of the general obligations set out in Article 4;

- (e) verifying that materials, treatment chemicals and filter media that come into contact with water intended for human consumption used in the supply system comply with Articles 11 and 12.
4. On the basis of the outcome of the risk assessment of the supply system carried out in accordance with paragraph 2, Member States shall:
- (a) allow the possibility of decreasing the monitoring frequency of a parameter or of removing a parameter from the list of parameters to be monitored, except for the core parameters referred to in point 1 of Part B of Annex II, if the competent authority is satisfied that to do so would not compromise the quality of water intended for human consumption:
 - (i) on the basis of the occurrence of a parameter in raw water, in accordance with the risk assessment of the catchment areas for abstraction points as set out in Article 8(1) and (2);
 - (ii) when a parameter can only occur as a result of the use of a certain treatment technique or disinfection method, and that technique or method is not used by the water supplier; or
 - (iii) on the basis of the specifications set out in Part C of Annex II;

- (b) ensure that the list of parameters to be monitored in water intended for human consumption in accordance with Article 13 is extended or that the monitoring frequency is increased:
 - (i) on the basis of the occurrence of a parameter in raw water, in accordance with the risk assessment of the catchment areas for abstraction points as set out in Article 8(1) and (2); or
 - (ii) on the basis of the specifications set out in Part C of Annex II.
- 5. The risk assessment of the supply system shall concern parameters listed in Parts A, B and C of Annex I, parameters set in accordance with Article 5(3) and substances or compounds included in the watch list established in accordance with Article 13(8).
- 6. Member States may exempt water suppliers supplying between 10 and 100 m³ per day as an average or serving between 50 and 500 people from the requirement to carry out risk assessment and risk management of the supply system, provided that the competent authority is satisfied that such exemption would not compromise the quality of water intended for human consumption.

In the event of such an exemption, the exempted water suppliers shall carry out regular monitoring in accordance with Article 13.

Article 10

Risk assessment of domestic distribution systems

1. Member States shall ensure that a risk assessment of domestic distribution systems is carried out. That risk assessment shall comprise the following elements:
 - (a) a general analysis of the potential risks associated with domestic distribution systems, and with related products and materials, and whether those potential risks affect the quality of water at the point where it emerges from the taps that are normally used for water intended for human consumption; this general analysis shall not entail an analysis of individual properties; and
 - (b) monitoring of the parameters listed in Part D of Annex I in premises where specific risks to water quality and human health have been identified during the general analysis performed under point (a).

In relation to *Legionella* or lead, Member States may decide to focus the monitoring referred to in point (b) of the first subparagraph on priority premises.

2. Where Member States conclude, on the basis of the general analysis carried out under point (a) of the first subparagraph of paragraph 1, that there is a risk to human health stemming from domestic distribution systems or from the related products and materials, or where monitoring performed in accordance with point (b) of the first subparagraph of paragraph 1 demonstrates that the parametric values set out in Part D of Annex I are not met, Member States shall ensure that appropriate measures are taken to eliminate or reduce the risk of non-compliance with the parametric values set out in Part D of Annex I.

In relation to *Legionella*, those measures shall target at least priority premises.

3. In order to reduce the risks connected with domestic distribution across all domestic distribution systems, Member States shall ensure that all of the following measures are considered and that those measures considered relevant are taken:
- (a) encourage owners of public and private premises to carry out a risk assessment of the domestic distribution system;
 - (b) inform consumers and owners of public and private premises about measures to eliminate or reduce the risk of non-compliance with the quality standards for water intended for human consumption due to the domestic distribution system;
 - (c) advise consumers about the conditions of consumption and use of water intended for human consumption, and about possible action to avoid the reoccurrence of those risks;

- (d) promote training for plumbers and other professionals dealing with domestic distribution systems and the installation of construction products and materials that come into contact with water intended for human consumption;
- (e) in relation to *Legionella*, ensure that effective control and management measures which are proportionate to the risk are in place to prevent and address possible outbreaks of the disease; and
- (f) in relation to lead, if economically and technically feasible, implement measures for substitution of components made of lead in existing domestic distribution systems.

Article 11

Minimum hygiene requirements for materials that come into contact with water intended for human consumption

1. For the purposes of Article 4, Member States shall ensure that materials that are intended to be used in new installations or, in the case of repair works or reconstruction, in existing installations for the abstraction, treatment, storage or distribution of water intended for human consumption and that come into contact with such water do not:
 - (a) directly or indirectly compromise the protection of human health as provided for by this Directive;
 - (b) adversely affect the colour, odour or taste of the water;

- (c) enhance microbial growth;
- (d) leach contaminants into the water at levels that are higher than necessary in view of the intended purpose of the material.

2. For the purpose of ensuring the uniform application of paragraph 1, the Commission shall adopt implementing acts to establish the specific minimum hygiene requirements for materials that come into contact with water intended for human consumption on the basis of the principles set out in Annex V. Those implementing acts shall establish:

- (a) by ... [three years after the date of entry into force of this Directive], methodologies for testing and accepting starting substances, compositions and constituents to be included in European positive lists of starting substances, compositions or constituents, including specific migration limits and scientific pre-conditions related to substances or materials;
- (b) by ... [four years after the date of entry into force of this Directive], on the basis of lists including expiry dates compiled by ECHA, European positive lists of starting substances, compositions or constituents for each group of materials, namely organic, cementitious, metallic, enamels and ceramic or other inorganic materials, which are authorised for use in the manufacture of materials or products in contact with water intended for human consumption, including, where appropriate, conditions for their use and migration limits, which are to be determined on the basis of the methodologies adopted pursuant to point (a) of this subparagraph, and taking into account paragraphs 3 and 4;

- (c) by ... [three years after the date of entry into force of this Directive], procedures and methods for testing and accepting final materials as used in a product made from materials or combinations of starting substances, compositions or constituents on the European positive lists, including:
- (i) the identification of relevant substances and other parameters, such as turbidity, flavour, odour, colour, total organic carbon, the release of unexpected substances and enhancement of microbial growth, to be tested in migration water;
 - (ii) methods for testing the effects on water quality, having regard to any relevant European standards;
 - (iii) pass/fail criteria for the test results which take into account, *inter alia*, conversion factors for substance migration into estimated levels at the tap, and conditions of application or use, where appropriate.

The implementing acts provided for in this paragraph shall be adopted in accordance with the examination procedure referred to in Article 22.

3. The first European positive lists to be adopted in accordance with point (b) of the first subparagraph of paragraph 2 shall be based, *inter alia*, on existing national positive lists, other existing national provisions and on the risk assessments that led to the establishment of such national lists. For this purpose, Member States shall notify ECHA of any existing national positive lists, other provisions and available assessment documents by ... [six months after the date of entry into force of this Directive].

The European positive list of starting substances for organic materials shall take into account the list established by the Commission pursuant to Article 5 of Regulation (EC) No 1935/2004.

4. The European positive lists shall contain the only starting substances, compositions or constituents that are authorised for use as referred to in point (b) of the first subparagraph of paragraph 2.

The European positive lists shall contain expiry dates set on the basis of a recommendation from ECHA. The expiry dates shall be set in particular on the basis of the hazardous properties of the substances, the quality of the underlying risk assessments, and the extent to which those risk assessments are up-to-date. The European positive lists may also contain transitional provisions.

On the basis of opinions from ECHA as referred to in paragraph 5, the Commission shall regularly review and update, where necessary, the implementing acts referred to in point (b) of the first subparagraph of paragraph 2, in line with the latest scientific and technological developments.

The first review shall be completed by 15 years after the adoption of the first European positive list.

The Commission shall ensure that any relevant acts, or standardisation mandates, which it adopts pursuant to other Union legislation are consistent with this Directive.

5. For the purpose of inclusion in or removal from the European positive lists of starting substances, compositions or constituents, economic operators or relevant authorities shall submit applications to ECHA.

The Commission shall adopt delegated acts in accordance with Article 21, in order to supplement this Directive, by laying down a procedure, including information requirements, on the application process. The procedure shall ensure that applications are accompanied by risk assessments and that economic operators or relevant authorities deliver the necessary information for the risk assessment in a specific format.

6. The Committee for Risk Assessment of ECHA set up pursuant to point (c) of Article 76(1) of Regulation (EC) No 1907/2006 shall issue an opinion on any application submitted pursuant to paragraph 5 within a time limit to be set out in the delegated acts referred to in that paragraph. Further procedural provisions on the application process and on the issuing of opinions by the Committee for Risk Assessment of ECHA may also be included in those delegated acts.

7. Member States shall consider that products approved in accordance with specific minimum hygiene requirements provided for in paragraph 2 satisfy the requirements set out in paragraph 1.

Member States shall ensure that only such products in contact with water intended for human consumption that use final materials approved in accordance with this Directive can be placed on the market for the purposes of this Directive.

This shall not prevent Member States, in particular when specific local raw water quality so requires, from adopting more stringent protective measures for the use of final materials in specific or duly justified circumstances, in accordance with Article 193 TFEU. Such measures shall be notified to the Commission.

Regulation (EU) 2019/1020 shall apply to products covered by this Article.

8. The Commission shall adopt delegated acts in accordance with Article 21, in order to supplement this Directive, by determining the appropriate conformity assessment procedure applicable to products covered by this Article on the basis of the modules in Annex II to Decision No 768/2008/EC of the European Parliament and of the Council¹. In determining which conformity assessment procedure is to be used, the Commission shall ensure that the objectives referred to in Article 1(2) of this Directive are complied with, whilst taking into account the principle of proportionality. For this purpose, the Commission shall take as a starting point the System 1+ of assessment and verification of constancy of performance set out in Annex V to Regulation (EU) No 305/2011, or a broadly equivalent procedure, except where it would be disproportionate. The delegated acts referred to in this paragraph shall also contain rules for the designation of conformity assessment bodies, where such are involved in the respective conformity assessment procedures.

¹ Decision No 768/2008/EC of the European Parliament and of the Council of 9 July 2008 on a common framework for the marketing of products, and repealing Council Decision 93/465/EEC (OJ L 218, 13.8.2008, p. 82).

9. Pending the adoption of the implementing acts referred to in paragraph 2, Member States shall be entitled to maintain or adopt national measures on specific minimum hygiene requirements for the materials referred to in paragraph 1, provided that those measures comply with the rules of the TFEU.
10. The Commission shall request one or several European standardisation organisations to draft a European standard for uniform testing and assessment of products in contact with water intended for human consumption in accordance with Article 10 of Regulation (EU) No 1025/2012 of the European Parliament and of the Council¹, in order to facilitate compliance with this Article.
11. The Commission shall adopt delegated acts in accordance with Article 21 in order to supplement this Directive by establishing harmonised specifications for a conspicuous, clearly legible and indelible marking to be used to indicate that products in contact with water intended for human consumption are in conformity with this Article.

¹ Regulation (EU) No 1025/2012 of the European Parliament and of the Council of 25 October 2012 on European standardisation, amending Council Directives 89/686/EEC and 93/15/EEC and Directives 94/9/EC, 94/25/EC, 95/16/EC, 97/23/EC, 98/34/EC, 2004/22/EC, 2007/23/EC, 2009/23/EC and 2009/105/EC of the European Parliament and of the Council and repealing Council Decision 87/95/EEC and Decision No 1673/2006/EC of the European Parliament and of the Council (OJ L 316, 14.11.2012, p. 12).

12. No later than ... [nine years after the end-date for transposition of this Directive], the Commission shall review the functioning of the system as set out in this Article and present a report to the European Parliament and the Council, based in particular on experience gained through the application of Regulations (EC) No 1935/2004 and (EU) No 305/2011, assessing whether:
- (a) human health as regards the matters covered by this Article is adequately protected throughout the Union;
 - (b) the internal market for products in contact with water intended for human consumption is functioning properly;
 - (c) there is a need for any further legislative proposal on the matters covered by this Article.

Article 12

Minimum requirements for treatment chemicals and filter media that come into contact with water intended for human consumption

1. For the purposes of Article 4, Member States shall ensure that treatment chemicals and filter media that come into contact with water intended for human consumption do not:
- (a) directly or indirectly compromise the protection of human health as provided for by this Directive;

- (b) adversely affect the colour, odour or taste of the water;
 - (c) unintentionally enhance microbial growth;
 - (d) contaminate the water at levels that are higher than necessary in view of the intended purpose.
2. For the national implementation of the requirements of this Article, Article 4(2) shall apply accordingly.
 3. Pursuant to paragraph 1 of this Article, and without prejudice to Regulation (EU) No 528/2012 and by using relevant European standards for specific treatment chemicals or filter media, Member States shall ensure that the purity of treatment chemicals and filter media is assessed and the quality of such chemicals and filter media is guaranteed.

Article 13

Monitoring

1. Member States shall take all measures necessary to ensure that regular monitoring of the quality of water intended for human consumption is carried out in accordance with this Article and Parts A and B of Annex II, in order to check that the water available to consumers meets the requirements of this Directive and in particular the parametric values set in accordance with Article 5. Samples of water intended for human consumption shall be taken so that they are representative of its quality throughout the year.

2. To meet the obligations imposed in paragraph 1, appropriate monitoring programmes shall be established in accordance with Part A of Annex II for all water intended for human consumption. Those monitoring programmes shall be supply-specific, taking into account the outcomes of the risk assessment of the catchment areas for abstraction points and of the supply systems, and shall consist of the following elements:
- (a) monitoring of the parameters listed in Parts A, B and C of Annex I, and of the parameters set in accordance with Article 5(3), in accordance with Annex II, and, where a risk assessment of the supply system is carried out, in accordance with Article 9 and Part C of Annex II, unless a Member State decides that one of those parameters can be removed, in accordance with point (b) of the second subparagraph of Article 8(5) or point (a) of Article 9(4), from the list of parameters to be monitored;
 - (b) monitoring of the parameters listed in Part D of Annex I, for the purposes of the risk assessment of domestic distribution systems, as provided for in point (b) of Article 10(1);
 - (c) monitoring of the substances and compounds included in the watch list, in accordance with the fifth subparagraph of paragraph 8;
 - (d) monitoring, for the purposes of the identification of hazards and hazardous events, as provided for in point (c) of the first subparagraph of Article 8(2);
 - (e) operational monitoring conducted in accordance with point 3 of Part A of Annex II.

3. The sampling points shall be determined by the competent authorities and shall meet the relevant requirements set out in Part D of Annex II.
4. Member States shall comply with the specifications for the analyses of parameters set out in Annex III, in accordance with the following principles:
 - (a) methods of analysis other than those specified in Part A of Annex III may be used, provided that it can be demonstrated that the results obtained are at least as reliable as those produced by the methods specified in Part A of Annex III, by providing the Commission with all relevant information concerning such methods and their equivalence;
 - (b) for the parameters listed in Part B of Annex III, any method of analysis may be used provided that it meets the requirements set out therein.
5. Member States shall ensure that additional monitoring is carried out on a case-by-case basis of substances and micro-organisms for which no parametric value has been set in accordance with Article 5, if there is reason to suspect that they may be present in numbers or concentrations which constitute a potential danger to human health.
6. By ... [three years after the date of entry into force of this Directive], the Commission shall adopt delegated acts in accordance with Article 21 in order to supplement this Directive by adopting a methodology to measure microplastics with a view to including them on the watch list referred to in paragraph 8 of this Article once the conditions set out under that paragraph are fulfilled.

7. By ... [three years after the date of entry into force of this Directive], the Commission shall establish technical guidelines regarding methods of analysis for monitoring of per- and polyfluoroalkyl substances under the parameters 'PFAS Total' and 'Sum of PFAS', including detection limits, parametric values and frequency of sampling.
8. The Commission shall adopt implementing acts to establish and update a watch list addressing substances or compounds of concern to the public or the scientific community on health grounds ('the watch list'), such as pharmaceuticals, endocrine-disrupting compounds and microplastics.

Substances and compounds shall be added to the watch list where they are likely to be present in water intended for human consumption and could pose a potential risk to human health. To that end, the Commission shall make use, in particular, of scientific research of the WHO. The addition of any new substance or compound shall be duly justified under Articles 1 and 4.

Beta-estradiol and Nonylphenol shall be included in the first watch list in view of their endocrine-disrupting properties and the risk they pose to human health. The first watch list shall be established by ... [one year after the date of entry into force of this Directive].

The watch list shall indicate a guidance value for each substance or compound and where necessary a possible method of analysis that does not entail excessive costs.

Member States shall put in place monitoring requirements with regard to the potential presence of the substances or compounds which are included in the watch list, at relevant points of the supply chain for water intended for human consumption.

For this purpose, Member States may take into account the information collected under Article 8(1), (2) and (3) of this Directive and may use the monitoring data collected in accordance with Directives 2000/60/EC and 2008/105/EC or other relevant Union legislation, in order to avoid overlapping of monitoring requirements.

The monitoring results shall be included in the data sets, set up in accordance with point (b) of Article 18(1), together with the results of the monitoring performed under point (c) of the first subparagraph of Article 8(2).

Where a substance or compound included in the watch list is detected, under Article 8(2) or under the fifth subparagraph of this paragraph, in concentrations exceeding the guidance values set out in the watch list, Member States shall ensure that the following measures are considered and that those measures considered relevant are taken:

- (a) preventive measures, mitigation measures or appropriate monitoring in the catchment areas for abstraction points or in raw water as set out in points (a), (b) and (c) of the first subparagraph of Article 8(4);
- (b) requiring water suppliers to carry out monitoring of those substances or compounds, in accordance with point (a) of the second subparagraph of Article 8(5);

- (c) requiring water suppliers to check whether treatment is adequate to reach the guidance value and, where necessary, to optimise the treatment; and
- (d) remedial actions in accordance with Article 14(6) where Member States consider it necessary to protect human health.

The implementing acts provided for in this paragraph shall be adopted in accordance with the examination procedure referred to in Article 22.

Article 14

Remedial action and restrictions of use

1. Member States shall ensure that any failure to meet the parametric values set in accordance with Article 5 is immediately investigated in order to identify the cause.
2. If, despite the measures taken to meet the obligations imposed in Article 4(1), water intended for human consumption does not meet the parametric values set in accordance with Article 5, and without prejudice to Article 6(2), the Member State concerned shall ensure that the necessary remedial action is taken as soon as possible to restore the quality of that water and shall give priority to its enforcement, having regard to *inter alia* the extent to which the relevant parametric value has been exceeded and the associated potential danger to human health.

In the event of non-compliance with the parametric values set out in Part D of Annex I, remedial action shall include the measures set out in Article 10(3).

3. Regardless of whether any failure to comply with the parametric values has occurred, Member States shall ensure that any supply of water intended for human consumption which constitutes a potential danger to human health is prohibited or the use of such water restricted and that any other remedial action that is necessary to protect human health is taken.

Member States shall consider a failure to meet the minimum requirements for parametric values set out in Parts A and B of Annex I as a potential danger to human health, except where the competent authority considers the non-compliance with the parametric value to be trivial.

4. In the cases described in paragraphs 2 and 3, where the non-compliance with the parametric values is considered to be a potential danger to human health, Member States shall as soon as possible take all of the following measures:
- (a) notify all affected consumers of the potential danger to human health and its cause, of the exceedance of a parametric value and of the remedial actions taken, including prohibition or restriction of use or other action;
 - (b) give, and regularly update, the necessary advice to consumers on conditions of consumption and use of the water, taking particular account of population groups with increased water-related health risks; and
 - (c) inform consumers once it has been established that there is no longer a potential danger to human health and inform them that the service has returned to normal.

5. The competent authorities or other relevant bodies shall decide what action under paragraph 3 is to be taken, bearing in mind the risks to human health which would be caused by an interruption of the supply or a restriction in the use of water intended for human consumption.
6. In the event of non-compliance with the parametric values or with the specifications set out in Part C of Annex I, Member States shall consider whether that non-compliance poses any risk to human health. They shall take remedial action to restore the quality of water intended for human consumption where that is necessary to protect human health.

Article 15
Derogations

1. In duly justified circumstances, Member States may provide for derogations from the parametric values set out in Part B of Annex I, or set in accordance with Article 5(3), up to a maximum value to be determined by them, provided that such derogations do not constitute a potential danger to human health and provided that the supply of water intended for human consumption in the area concerned cannot be maintained by any other reasonable means. Such derogations shall be limited to the following:
 - (a) a new catchment area for the abstraction of water intended for human consumption;
 - (b) a new source of pollution detected at the catchment area for the abstraction of water intended for human consumption or parameters newly searched for or detected; or

- (c) an unforeseen and exceptional situation in an existing catchment area for the abstraction of water intended for human consumption that could lead to temporary limited exceedances of the parametric values.

Derogations referred to in the first subparagraph shall be limited to as short a period as possible and shall not exceed three years in duration. Towards the end of the period of the derogation, Member States shall conduct a review to determine whether sufficient progress has been made.

In exceptional circumstances, a Member State may grant a second derogation in respect of points (a) and (b) of the first subparagraph. Where a Member State intends to grant such a second derogation, it shall communicate the results of the review, along with the grounds for its decision on the second derogation, to the Commission. Such a second derogation shall not exceed three years in duration.

2. Any derogation granted in accordance with paragraph 1 shall specify the following:

- (a) the grounds for the derogation;
- (b) the parameter concerned, previous relevant monitoring results, and the maximum permissible parametric value under the derogation;
- (c) the geographical area, the quantity of water supplied each day, the population concerned and whether any relevant food business operator- would be affected;

- (d) an appropriate monitoring scheme, with an increased monitoring frequency where necessary;
 - (e) a summary of the plan for the necessary remedial action, including a timetable for the work and an estimate of the cost and provisions for reviewing; and
 - (f) the duration of the derogation.
3. If the competent authorities consider the non-compliance with the parametric value to be trivial, and if action taken in accordance with Article 14(2) is sufficient to remedy the problem within 30 days, the information provided for in paragraph 2 of this Article does not need to be specified in the derogation.
- In that event, only the maximum permissible value for the parameter concerned and the time allowed to remedy the problem shall be set by the competent authorities or other relevant bodies in the derogation.
4. If there is a failure to comply with any parametric value for a given water supply on more than 30 days on aggregate during the previous 12 months, recourse may no longer be had to paragraph 3.
5. Any Member State which has granted a derogation as provided for in this Article shall ensure that the population affected by any such derogation is promptly informed in an appropriate manner of that derogation and of the conditions governing it. In addition, the Member State shall, where necessary, ensure that advice is given to particular population groups for which the derogation could present a special risk.

The obligations referred to in the first subparagraph shall not apply in the circumstances described in paragraph 3, unless the competent authorities decide otherwise.

6. This Article shall not apply to water intended for human consumption put into bottles or containers.

Article 16

Access to water intended for human consumption

1. Without prejudice to Article 9 of Directive 2000/60/EC and to the principles of subsidiarity and proportionality, whilst taking into account the local, regional and cultural perspectives and circumstances for water distribution, Member States shall take the necessary measures to improve or maintain access to water intended for human consumption for all, in particular for vulnerable and marginalised groups, as defined by the Member States.

For that purpose, Member States shall:

- (a) identify people without access, or with limited access, to water intended for human consumption, including vulnerable and marginalised groups, and reasons for such lack of access;
- (b) assess possibilities for improving access for such people;

- (c) inform such people about possibilities for connecting to the distribution network or about alternative means of having access to water intended for human consumption; and
- (d) take measures that they consider necessary and appropriate to ensure that there is access to water intended for human consumption for vulnerable and marginalised groups.

2. In order to promote the use of tap water intended for human consumption, Member States shall ensure that outdoor and indoor equipment is set up in public spaces, where technically feasible, in a manner that is proportionate to the need for such measures and taking into account specific local conditions, such as climate and geography.

Member States may also take the following measures to promote the use of tap water intended for human consumption:

- (a) raising awareness of the nearest outdoor or indoor equipment;
- (b) launching campaigns to inform citizens about the quality of such water;
- (c) encouraging the provision of such water in public administrations and public buildings;
- (d) encouraging the provision of such water, for free or for a low service fee, for customers in restaurants, canteens and catering services.

3. Member States shall ensure that the necessary assistance, as defined by the Member States, for competent authorities is facilitated in order to implement the measures referred to in this Article.

Article 17

Information to the public

1. Member States shall ensure that adequate, up-to-date information on water intended for human consumption is available in accordance with Annex IV, while complying with applicable data protection rules.
2. Member States shall ensure that all persons supplied with water intended for human consumption receive the following information regularly and at least once a year, without having to request it, and in the most appropriate and easily accessible form, for example on invoices or by digital means such as smart applications:
 - (a) information on the quality of water intended for human consumption, including the indicator parameters;
 - (b) the price of water intended for human consumption supplied, per litre and cubic metre;
 - (c) the volume consumed by the household, at least per year or per billing period, together with yearly trends of the household consumption, if technically feasible and if this information is available to the water supplier;

- (d) comparisons of the yearly water consumption of the household with an average household consumption, when applicable in accordance with point (c);
 - (e) a link to the website containing the information set out in Annex IV.
3. Paragraphs 1 and 2 shall be without prejudice to Directives 2003/4/EC and 2007/2/EC.

Article 18

Information on monitoring of implementation

1. Without prejudice to Directives 2003/4/EC and 2007/2/EC, Member States, assisted by the EEA, shall:
- (a) set up by ... [six years after the end-date for transposition of this Directive], and update every six years thereafter, a data set containing information on measures taken to improve access to and promote the use of water intended for human consumption in accordance with Article 16, and on the share of their population that has access to water intended for human consumption; this does not include water put into bottles or containers;

- (b) set up by ... [four years and six months after the end-date for transposition of this Directive], and update every six years thereafter, a data set containing information related to the risk assessment and risk management of the catchment areas for abstraction points carried out in accordance with Article 8, and set up by ... [six years after the end-date for transposition of this Directive], and update every six years thereafter, a data set containing information related to the risk assessment of domestic distribution systems carried out in accordance with Article 10, including the following elements:
- (i) information on catchment areas for abstraction points under point (a) of the first subparagraph of Article 8(2);
 - (ii) the results of the monitoring performed under point (c) of the first subparagraph of Article 8(2) and point (b) of the first subparagraph of Article 10(1); and
 - (iii) concise information on measures taken pursuant to Article 8(4) and Article 10(2) and (3), including information on the type of measures taken, and the progress made, under point (f) of Article 10(3);
- (c) set up, and update annually thereafter, a data set containing monitoring results, in cases of exceedances of the parametric values set out in Parts A and B of Annex I, collected in accordance with Articles 9 and 13 and information about the remedial actions taken in accordance with Article 14;

- (d) set up, and update annually thereafter, a data set containing information on incidents relating to water intended for human consumption that have caused a potential risk to human health, regardless of whether any failure to meet the parametric values occurred, that lasted for more than 10 consecutive days and that affected at least 1 000 people, including the causes of those incidents and remedial actions taken in accordance with Article 14; and
- (e) set up, and update annually thereafter, a data set containing information on all derogations granted in accordance with Article 15(1), including the information provided for in Article 15(2).

Where possible, spatial data services as defined in point (4) of Article 3 of Directive 2007/2/EC shall be used to present the data sets referred to in the first subparagraph.

2. Member States shall ensure that the Commission, the EEA and the European Centre for Disease Prevention and Control have access to the data sets referred to in paragraph 1.
3. The EEA shall publish and update a Union-wide overview on the basis of the data collected by the Member States on a regular basis or upon request from the Commission.

The Union-wide overview shall include, as appropriate, indicators for outputs, results and the impact of this Directive, Union-wide overview maps and Member State overview reports.

4. The Commission may adopt implementing acts specifying the format of, and modalities for presenting, the information to be provided in accordance with paragraphs 1 and 3, including detailed requirements regarding the indicators, the Union-wide overview maps and the Member State overview reports referred to in paragraph 3. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 22.
5. Member States may derogate from this Article on any of the grounds referred to in Article 13(1) of Directive 2007/2/EC.

Article 19
Evaluation

1. The Commission shall, by ... [12 years after the end-date for transposition of this Directive], carry out an evaluation of this Directive. The evaluation shall be based, *inter alia*, on the following elements:
 - (a) the experience gained through the implementation of this Directive;
 - (b) the data sets from Member States set up in accordance with Article 18(1) and the Union-wide overviews compiled by the EEA in accordance with Article 18(3);
 - (c) relevant scientific, analytical and epidemiological data;
 - (d) WHO recommendations, where available.

2. In the context of the evaluation, the Commission shall pay particular attention to the following aspects:
 - (a) the risk-based approach set out in Article 7;
 - (b) provisions related to access to water intended for human consumption, set out in Article 16;
 - (c) provisions concerning the information to be provided to the public under Article 17 and Annex IV.
3. The Commission shall, no later than ... [six years after the end-date for transposition of this Directive], and thereafter where appropriate, submit a report to the European Parliament and to the Council on the potential threat to sources of water intended for human consumption from microplastics, pharmaceuticals and, if necessary, other contaminants of emerging concern, and on the relevant associated potential health risks.

Article 20

Review and amendment of Annexes

1. At least every five years, the Commission shall review Annexes I and II in light of scientific and technical progress as well as of the Member States' risk-based approach to water safety contained in the data sets established pursuant to Article 18 and, where appropriate, shall submit a legislative proposal to amend this Directive.

2. The Commission is empowered to adopt delegated acts in accordance with Article 21 in order to amend Annex III where necessary to adapt it to scientific and technical progress.

The Commission is empowered to adopt delegated acts in accordance with Article 21 in order to amend the parametric value of Bisphenol A in Part B of Annex I, to the extent necessary to adapt it to scientific and technical progress, essentially based on the ongoing review carried out by EFSA.

Article 21

Exercise of the delegation

1. The power to adopt delegated acts is conferred on the Commission subject to the conditions laid down in this Article.
2. The power to adopt delegated acts referred to in Articles 4(3), 11(5), 11(8), 11(11), 13(6) and 20(2) shall be conferred on the Commission for a period of five years from ... [date of entry into force of this Directive]. The Commission shall draw up a report in respect of the delegation of power not later than nine months before the end of the five-year period. The delegation of power shall be tacitly extended for periods of an identical duration, unless the European Parliament or the Council opposes such extension no later than three months before the end of each period.

3. The delegation of power referred to in Articles 4(3), 11(5), 11(8), 11(11), 13(6) and 20(2) may be revoked at any time by the European Parliament or by the Council. A decision to revoke shall put an end to the delegation of the power specified in that decision. It shall take effect the day following the publication of the decision in the *Official Journal of the European Union* or at a later date specified therein. It shall not affect the validity of any delegated acts already in force.
4. Before adopting a delegated act, the Commission shall consult experts designated by each Member State in accordance with the principles laid down in the Interinstitutional Agreement of 13 April 2016 on Better Law-Making.
5. As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and to the Council.
6. A delegated act adopted pursuant to Articles 4(3), 11(5), 11(8), 11(11), 13(6) and 20(2) shall enter into force only if no objection has been expressed either by the European Parliament or the Council within a period of two months of notification of that act to the European Parliament and the Council or if, before the expiry of that period, the European Parliament and the Council have both informed the Commission that they will not object. That period shall be extended by two months at the initiative of the European Parliament or of the Council.

Article 22
Committee procedure

1. The Commission shall be assisted by a committee. That committee shall be a committee within the meaning of Regulation (EU) No 182/2011.
2. Where reference is made to this paragraph, Article 5 of Regulation (EU) No 182/2011 shall apply.

Where the Committee delivers no opinion, the Commission shall not adopt the draft implementing act and the third subparagraph of Article 5(4) of Regulation (EU) No 182/2011 shall apply.

Article 23
Penalties

Member States shall lay down the rules on penalties applicable to infringements of national provisions adopted pursuant to this Directive and shall take all measures necessary to ensure that they are implemented. The penalties provided for shall be effective, proportionate and dissuasive. Member States shall, by ... [two years after the date of entry into force of this Directive], notify the Commission of those rules and of those measures and shall notify it of any subsequent amendment affecting them.

Article 24
Transposition

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with Articles 1 to 18, Article 23 and Annexes I to V by ... [two years after the date of entry into force of this Directive]. They shall immediately communicate the text of those measures to the Commission.

When Member States adopt those measures, they shall contain a reference to this Directive or shall be accompanied by such a reference on the occasion of their official publication. They shall also include a statement that references in existing laws, regulations and administrative provisions to the Directive repealed by this Directive shall be construed as references to this Directive. Member States shall determine how such reference is to be made and how that statement is to be formulated.

2. Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive.

Article 25
Transitional period

1. By ... [three years after the end-date for transposition of this Directive], Member States shall take the measures necessary to ensure that water intended for human consumption complies with the parametric values set out in Part B of Annex I for Bisphenol A, Chlorate, Chlorite, Haloacetic Acids, Microcystin-LR, PFAS Total, Sum of PFAS and Uranium.

2. Until ... [three years after the end-date for transposition of this Directive], water suppliers shall not be obliged to monitor water intended for human consumption in accordance with Article 13 for the parameters listed in paragraph 1 of this Article.

Article 26

Repeal

1. Directive 98/83/EC, as amended by the acts listed in Part A of Annex VI, is repealed with effect from ... [two years + one day after the date of entry into force of this Directive], without prejudice to the obligations of the Member States relating to the time-limits for the transposition into national law of the Directives set out in Part B of Annex VI.

References to the repealed Directive shall be construed as references to this Directive and shall be read in accordance with the correlation table in Annex VII.

2. Derogations granted by Member States in accordance with Article 9(1) of Directive 98/83/EC that are still applicable on ... [the end-date for transposition of this Directive] shall remain applicable until the end of their duration. They may be renewed in accordance with Article 15 of this Directive only where a second derogation has not yet been granted. The right to ask the Commission for a third derogation in accordance with Article 9(2) of Directive 98/83/EC shall remain applicable for second derogations that are still applicable on ... [the date of entry into force of this Directive].

Article 27
Entry into force

This Directive shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

Article 28
Addressees

This Directive is addressed to the Member States.

Done at ..., ...

For the European Parliament
The President

For the Council
The President

ANNEX I

MINIMUM REQUIREMENTS FOR PARAMETRIC VALUES USED TO ASSESS THE QUALITY OF WATER INTENDED FOR HUMAN CONSUMPTION

Part A

Microbiological parameters

| Parameter | Parametric value | Unit | Notes |
|--|------------------|---------------|--|
| Intestinal enterococci | 0 | number/100 ml | For water put into bottles or containers, the unit is number/250 ml. |
| <i>Escherichia coli</i> (<i>E. coli</i>) | 0 | number/100 ml | For water put into bottles or containers, the unit is number/250 ml. |

Part B

Chemical parameters

| Parameter | Parametric value | Unit | Notes |
|----------------|------------------|------|--|
| Acrylamide | 0,10 | µg/l | The parametric value of 0,10 µg/l refers to the residual monomer concentration in the water as calculated according to specifications of the maximum release from the corresponding polymer in contact with the water. |
| Antimony | 10 | µg/l | |
| Arsenic | 10 | µg/l | |
| Benzene | 1,0 | µg/l | |
| Benzo(a)pyrene | 0,010 | µg/l | |
| Bisphenol A | 2,5 | µg/l | |
| Boron | 1,5 | mg/l | A parametric value of 2,4 mg/l shall be applied when desalinated water is the predominant water source of the supply system concerned or in regions where geological conditions could lead to high levels of boron in groundwater. |
| Bromate | 10 | µg/l | |
| Cadmium | 5,0 | µg/l | |

| Parameter | Parametric value | Unit | Notes |
|-----------|------------------|------|---|
| Chlorate | 0,25 | mg/l | A parametric value of 0,70 mg/l shall be applied where a disinfection method that generates chlorate, in particular chlorine dioxide, is used for disinfection of water intended for human consumption. Where possible, without compromising disinfection, Member States shall strive for a lower value. This parameter shall be measured only if such disinfection methods are used. |
| Chlorite | 0,25 | mg/l | A parametric value of 0,70 mg/l shall be applied where a disinfection method that generates chlorite, in particular chlorine dioxide, is used for disinfection of water intended for human consumption. Where possible, without compromising disinfection, Member States shall strive for a lower value. This parameter shall be measured only if such disinfection methods are used. |
| Chromium | 25 | µg/l | The parametric value of 25 µg/l shall be met, at the latest, by ... [15 years after the date of entry into force of this Directive]. The parametric value for chromium until that date shall be 50 µg/l. |

| Parameter | Parametric value | Unit | Notes |
|-------------------------|------------------|------|--|
| Copper | 2,0 | mg/l | |
| Cyanide | 50 | µg/l | |
| 1,2-dichloroethane | 3,0 | µg/l | |
| Epichlorohydrin | 0,10 | µg/l | The parametric value of 0,10 µg/l refers to the residual monomer concentration in the water as calculated according to specifications of the maximum release from the corresponding polymer in contact with the water. |
| Fluoride | 1,5 | mg/l | |
| Haloacetic acids (HAAs) | 60 | µg/l | This parameter shall be measured only when disinfection methods that can generate HAAs are used for the disinfection of water intended for human consumption. It is the sum of the following five representative substances: monochloro-, dichloro-, and trichloro-acetic acid, and mono- and dibromo-acetic acid. |
| Lead | 5 | µg/l | The parametric value of 5 µg/l shall be met, at the latest, by ... [15 years after the date of entry into force of this Directive]. The parametric value for lead until that date shall be 10 µg/l. |

| Parameter | Parametric value | Unit | Notes |
|----------------|------------------|------|---|
| | | | <p>After that date, the parametric value of 5 µg/l shall be met at least at the point of supply to the domestic distribution system.</p> <p>For the purposes of point (b) of the first subparagraph of Article 11(2), the parametric value of 5 µg/l at the tap shall apply.</p> |
| Mercury | 1,0 | µg/l | |
| Microcystin-LR | 1,0 | µg/l | This parameter shall be measured only in the event of potential blooms in source water (increasing cyanobacterial cell density or bloom forming potential). |
| Nickel | 20 | µg/l | |
| Nitrate | 50 | mg/l | Member States shall ensure that the condition $[\text{nitrate}]/50 + [\text{nitrite}]/3 \leq 1$, where the square brackets signify the concentrations in mg/l for nitrate (NO ₃) and nitrite (NO ₂), is complied with and that the parametric value of 0,10 mg/l for nitrites is complied with ex water treatment works. |
| Nitrite | 0,50 | mg/l | Member States shall ensure that the condition $[\text{nitrate}]/50 + [\text{nitrite}]/3 \leq 1$, where the square brackets signify the concentrations in mg/l for nitrate (NO ₃) and nitrite (NO ₂), is complied with and that the parametric value of 0,10 mg/l for nitrites is complied with ex water treatment works. |

| Parameter | Parametric value | Unit | Notes |
|------------|------------------|------|---|
| Pesticides | 0,10 | µg/l | <p>‘Pesticides’ means:</p> <ul style="list-style-type: none"> – organic insecticides, – organic herbicides, – organic fungicides, – organic nematocides, – organic acaricides, – organic algicides, – organic rodenticides – organic slimicides, – related products (<i>inter alia</i>, growth regulators) <p>and their metabolites as defined in point (32) of Article 3 of Regulation (EC) No 1107/2009 of the European Parliament and of the Council¹, that are considered relevant for water intended for human consumption.</p> <p>A pesticide metabolite shall be deemed relevant for water intended for human consumption if there is reason to consider that it has intrinsic properties comparable to those of the parent substance in terms of its pesticide target activity or that either itself or its transformation products generate a health risk for consumers.</p> |

¹ Regulation (EC) No 1107/2009 of the European Parliament and of the Council of 21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC (OJ L 309, 24.11.2009, p. 1).

| Parameter | Parametric value | Unit | Notes |
|------------------|------------------|------|--|
| | | | <p>The parametric value of 0,10 µg/l shall apply to each individual pesticide.</p> <p>In the case of aldrin, dieldrin, heptachlor and heptachlor epoxide, the parametric value shall be 0,030 µg/l.</p> <p>Member States shall define a guidance value to manage the presence of non-relevant metabolites of pesticides in water intended for human consumption.</p> <p>Only pesticides which are likely to be present in a given supply need to be monitored.</p> <p>Based on the data reported by Member States, the Commission may establish a database of pesticides and their relevant metabolites taking into account their possible presence in water intended for human consumption.</p> |
| Pesticides Total | 0,50 | µg/l | ‘Pesticides Total’ means the sum of all individual pesticides, as defined in the previous row, detected and quantified in the monitoring procedure. |

| Parameter | Parametric value | Unit | Notes |
|----------------------------------|------------------|------|---|
| PFAS Total | 0,50 | µg/l | <p>‘PFAS Total’ means the totality of per- and polyfluoroalkyl substances.</p> <p>This parametric value shall only apply once technical guidelines for monitoring this parameter are developed in accordance with Article 13(7). Member States may then decide to use either one or both of the parameters ‘PFAS Total’ or ‘Sum of PFAS’.</p> |
| Sum of PFAS | 0,10 | µg/l | <p>‘Sum of PFAS’ means the sum of per- and polyfluoroalkyl substances considered a concern as regards water intended for human consumption listed in point 3 of Part B of Annex III. This is a subset of ‘PFAS Total’ substances that contain a perfluoroalkyl moiety with three or more carbons (i.e. $-C_nF_{2n}-$, $n \geq 3$) or a perfluoroalkylether moiety with two or more carbons (i.e. $-C_nF_{2n}OC_mF_{2m}-$, n and $m \geq 1$).</p> |
| Polycyclic aromatic hydrocarbons | 0,10 | µg/l | <p>Sum of concentrations of the following specified compounds: benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, and indeno(1,2,3-cd)pyrene.</p> |

| Parameter | Parametric value | Unit | Notes |
|---------------------------------------|------------------|------|---|
| Selenium | 20 | µg/l | A parametric value of 30 µg/l shall be applied for regions where geological conditions could lead to high levels of selenium in groundwater. |
| Tetrachloroethene and Trichloroethene | 10 | µg/l | The sum of concentrations of these two parameters. |
| Trihalomethanes Total | 100 | µg/l | Where possible, without compromising disinfection, Member States shall strive for a lower parametric value. It is the sum of concentrations of the following specified compounds: chloroform, bromoform, dibromochloromethane, and bromodichloromethane. |
| Uranium | 30 | µg/l | |
| Vinyl chloride | 0,50 | µg/l | The parametric value of 0,50 µg/l refers to the residual monomer concentration in the water as calculated according to specifications of the maximum release from the corresponding polymer in contact with the water. |

Part C

Indicator parameters

| Parameter | Parametric value | Unit | Notes |
|---|--|------------------------------|--|
| Aluminium | 200 | µg/l | |
| Ammonium | 0,50 | mg/l | |
| Chloride | 250 | mg/l | The water should not be corrosive. |
| <i>Clostridium perfringens</i> including spores | 0 | number/100 ml | This parameter shall be measured if the risk assessment indicates that it is appropriate to do so. |
| Colour | Acceptable to consumers and no abnormal change | | |
| Conductivity | 2 500 | µS cm ⁻¹ at 20 °C | The water should not be aggressive. |
| Hydrogen ion concentration | ≥ 6,5 and ≤ 9,5 | pH units | The water should not be aggressive. For still water put into bottles or containers, the minimum value may be reduced to 4,5 pH units. For water put into bottles or containers which is naturally rich in or artificially enriched with carbon dioxide, the minimum value may be lower. |
| Iron | 200 | µg/l | |
| Manganese | 50 | µg/l | |
| Odour | Acceptable to consumers and no abnormal change | | |

| Parameter | Parametric value | Unit | Notes |
|---|--|---------------------|--|
| Oxidisability | 5,0 | mg/l O ₂ | This parameter need not be measured if the parameter TOC is analysed. |
| Sulphate | 250 | mg/l | The water should not be corrosive. |
| Sodium | 200 | mg/l | |
| Taste | Acceptable to consumers and no abnormal change | | |
| Colony count 22° C | No abnormal change | | |
| Coliform bacteria | 0 | number/100 ml | For water put into bottles or containers, the unit is number/250 ml. |
| Total organic carbon (TOC) | No abnormal change | | This parameter need not be measured for supplies of less than 10 000 m ³ a day. |
| Turbidity | Acceptable to consumers and no abnormal change | | |
| Water should not be aggressive or corrosive. This applies particularly to water undergoing treatment (demineralization, softening, membrane treatment, reverse osmosis, etc.). | | | |
| Where water intended for human consumption is derived from treatment that significantly demineralizes or softens water, calcium and magnesium salts could be added to condition the water in order to reduce any possible negative health impact, as well as to reduce the corrosiveness or aggressivity of water and to improve taste. Minimum concentrations of calcium and magnesium or total dissolved solids in softened or demineralized water could be established taking into account the characteristics of water that enters those processes. | | | |

Part D

Parameters relevant for the risk assessment of domestic distribution systems

| Parameter | Parametric value | Unit | Notes |
|-------------------|------------------|-------|---|
| <i>Legionella</i> | <1 000 | CFU/l | This parametric value is set for the purposes of Articles 10 and 14. Actions provided for in those Articles could be considered even when the value is below the parametric value, e.g. in cases of infections and outbreaks. In such cases, the source of infection should be confirmed and the species of <i>Legionella</i> should be identified. |
| Lead | 10 | µg/l | This parametric value is set for the purposes of Articles 10 and 14. Member States should use their best endeavours to achieve the lower value of 5 µg/l by ... [15 years after the date of entry into force of this Directive]. |

ANNEX II

MONITORING

Part A

General objectives and monitoring programmes for water intended for human consumption

1. Monitoring programmes established pursuant to Article 13(2) for water intended for human consumption shall:
 - (a) verify that the measures in place to control risks to human health throughout the water supply chain from the abstraction area through treatment and storage to distribution are working effectively and that water intended for human consumption at the point of compliance is wholesome and clean;
 - (b) provide information on the quality of water supplied for human consumption to demonstrate that the obligations set out in Article 4 and the parametric values set in accordance with Article 5 are being met;
 - (c) identify the most appropriate means of mitigating the risk to human health.
2. Monitoring programmes established pursuant to Article 13(2) shall include one or a combination of the following:
 - (a) collection and analysis of discrete water samples;
 - (b) measurements recorded by a continuous monitoring process.

In addition, monitoring programmes may consist of:

- (a) inspections of records of the functionality and maintenance status of equipment;
- (b) inspections of the abstraction area, and of the treatment, storage and distribution infrastructure, without prejudice to monitoring requirements provided for under point (c) of the first subparagraph of Article 8(2) and point (b) of the first subparagraph of Article 10(1).

3. Monitoring programmes shall also include an operational monitoring programme that provides rapid insight into operational performance and water quality problems and that allows rapid pre-planned remedial action. Such operational monitoring programmes shall be supply-specific, taking into account the outcomes of the identification of hazards and hazardous events and the risk assessment of the supply system, and shall be intended to confirm the effectiveness of all control measures in abstraction, treatment, distribution and storage.

The operational monitoring programme shall include the monitoring of the parameter ‘turbidity at the water supply plant’ in order to regularly control the efficacy of physical removal by filtration processes, in accordance with the reference values and frequencies indicated in the following table (not applicable for groundwater sources where turbidity is caused by iron and manganese):

| Operational parameter | Reference value |
|-------------------------------------|---|
| turbidity at the water supply plant | 0,3 NTU in 95 % of samples and none to exceed 1 NTU |

| Volume (m ³) of water distributed or produced each day within a supply zone | Minimum frequency of sampling and analysis |
|---|--|
| ≤ 1 000 | Weekly |
| > 1 000 to ≤ 10 000 | Daily |
| > 10 000 | Continuous |

The operational monitoring programme shall also include the monitoring of the following parameters in raw water to control the efficacy of the treatment processes against microbiological risks:

| Operational parameter | Reference value | Unit | Notes |
|-----------------------|--------------------|------------------------------------|--|
| Somatic coliphages | 50 (for raw water) | Plaque Forming Units (PFU) /100 ml | This parameter shall be measured if the risk assessment indicates that it is appropriate to do so. If it is found in raw water at concentrations > 50 PFU /100 ml, it should be analysed after steps of the treatment train in order to determine log removal by the barriers in place and to assess whether the risk of a breakthrough of pathogenic viruses is sufficiently under control. |

4. Member States shall ensure that monitoring programmes are reviewed on a continuous basis and updated or confirmed at least every six years.

Part B

Parameters and sampling frequencies

1. List of parameters

Group A

The following parameters (Group A) shall be monitored in accordance with the monitoring frequencies set out in Table 1 of point 2:

- (a) *Escherichia coli* (*E. coli*), intestinal enterococci, coliform bacteria, colony count 22 °C, colour, turbidity, taste, odour, pH and conductivity;
- (b) other parameters identified as relevant in the monitoring programme, in accordance with Article 5(3) and, where relevant, through a risk assessment of the supply system as set out in Article 9 and Part C of this Annex.

Under specific circumstances, the following parameters shall be added to the Group A parameters:

- (a) ammonium and nitrite, if chloramination is used;
- (b) aluminium and iron, if used as water treatment chemicals.

Escherichia coli (*E. coli*) and intestinal enterococci are considered ‘core parameters’ and their monitoring frequencies shall not be the subject of a reduction due to a risk assessment of the supply system in accordance with Article 9 and Part C of this Annex. They shall always be monitored at least at the frequencies set out in Table 1 of point 2.

Group B

In order to determine compliance with all parametric values set out in this Directive, all other parameters not analysed under Group A and set in accordance with Article 5, except for parameters in Part D of Annex I, shall be monitored at least at the frequencies set out in Table 1 of point 2, unless a different sampling frequency is determined on the basis of a risk assessment of the supply system carried out in accordance with Article 9 and Part C of this Annex.

2. Sampling frequencies

Table 1. Minimum frequency of sampling and analysis for compliance monitoring

| Volume of water distributed or produced each day within a supply zone (See Notes 1 and 2) m ³ | | Group A parameter number of samples per year | Group B parameter number of samples per year |
|---|---------|--|--|
| | < 10 | > 0 (See Note 4) | > 0 (See Note 4) |
| ≥ 10 | ≤ 100 | 2 | 1 (See Note 5) |
| > 100 | ≤ 1 000 | 4 | 1 |

| Volume of water distributed or produced each day within a supply zone (See Notes 1 and 2) m ³ | | Group A parameter number of samples per year | Group B parameter number of samples per year |
|---|-----------|---|--|
| > 1 000 | ≤ 10 000 | 4 for the first 1 000 m ³ /d + 3 for each additional 1 000 m ³ /d and part thereof of the total volume (See Note 3) | 1 for the first 1 000 m ³ /d + 1 for each additional 4 500 m ³ /d and part thereof of the total volume (See Note 3) |
| > 10 000 | ≤ 100 000 | | 3 for first 10 000 m ³ /d + 1 for each additional 10 000 m ³ /d and part thereof of the total volume (See Note 3) |
| > 100 000 | | | 12 for first 100 000 m ³ /d + 1 for each additional 25 000 m ³ /d and part thereof of the total volume (See Note 3) |

Note 1: A supply zone is a geographically defined area within which water intended for human consumption comes from one or more sources and within which the water quality can be considered as being approximately uniform.

Note 2: The volumes are calculated as averages taken over a calendar year. The number of inhabitants in a supply zone may be used instead of the volume of water to determine the minimum frequency, assuming water consumption of 200 l/(day*capita).

Note 3: The frequency indicated is calculated as follows: e.g. $4\,300\text{ m}^3/\text{d} = 16$ samples for Group A parameters (four for the first $1\,000\text{ m}^3/\text{d} + 12$ for additional $3\,300\text{ m}^3/\text{d}$).

Note 4: For water suppliers, where an exemption has not been granted under point (b) of Article 3(3), Member States shall lay down the minimum sampling frequency for parameters of Groups A and B, provided that core parameters are monitored at least once per year.

Note 5: Member States may reduce the sampling frequency, provided that all parameters set in accordance with Article 5 are monitored at least once every six years and are monitored in cases where a new water source is integrated into the water supply system or changes to that system, as a result of which a potentially adverse effect on the quality of water is to be expected, are made.

Part C

Risk assessment and risk management of the supply system

1. Based on the outcome of the risk assessment of the supply system as referred to in Article 9, the list of parameters considered in the monitoring shall be extended and the sampling frequencies set out in Part B increased where any of the following conditions is fulfilled:
 - (a) the list of parameters or frequencies set out in this Annex is not sufficient to fulfil the obligations imposed under Article 13(1);

- (b) additional monitoring is required for the purposes of Article 13(5);
 - (c) it is necessary to provide the assurances set out in point (a) of point 1 of Part A;
 - (d) increasing the sampling frequencies is necessary pursuant to point (a) of the first subparagraph of Article 8(4).
2. As a result of a risk assessment of the supply system, the list of parameters considered in the monitoring and the sampling frequencies set out in Part B may be reduced provided that all of the following conditions are met:
- (a) the location and frequency of sampling is determined in relation to the parameter's origin, as well as the variability of, and long-term trend regarding, its concentration, taking into account Article 6;
 - (b) as regards reducing the minimum sampling frequency of a parameter, the results obtained from samples collected at regular intervals over a period of at least three years, from sampling points representative of the whole supply zone, are all less than 60 % of the parametric value;
 - (c) as regards removing a parameter from the list of parameters to be monitored, the results obtained from samples collected at regular intervals over a period of at least three years, from sampling points representative of the whole supply zone, are all less than 30 % of the parametric value;

- (d) as regards removing a parameter from the list of parameters to be monitored, the decision is based on the outcome of the risk assessment, that takes into account the results of monitoring of sources of water intended for human consumption, and confirms, that human health is protected from the adverse effects of any contamination of water intended for human consumption, as laid down in Article 1;
- (e) as regards reducing the sampling frequency of a parameter or removing a parameter from the list of parameters to be monitored, the risk assessment confirms that no factor that can be reasonably anticipated is likely to cause deterioration of the quality of the water intended for human consumption.

Where monitoring results, demonstrating that the conditions set out in points (2)(b) to (2)(e) are met, are already available by ... [the date of entry into force of this Directive], those monitoring results may from that date be used to adapt the monitoring following the risk assessment of the supply system.

Where adjustments of monitoring have already been implemented following risk assessment of the supply system in accordance, *inter alia*, with Part C of Annex II of Directive 98/83/EC, Member States may provide for the possibility to confirm their validity without requiring monitoring in accordance with point 2(b) and 2(c) over a further period of at least three years from points representative of the whole supply zone.

Part D

Sampling methods and sampling points

1. Sampling points shall be determined so as to ensure compliance with Article 6(1). In the case of a distribution network, a Member State may take samples within the supply zone or at the treatment works for particular parameters if it can be demonstrated that there would be no adverse change to the measured value of the parameters concerned. As far as possible, the number of samples shall be distributed equally in time and location.
2. Sampling at the point of compliance shall meet the following requirements:
 - (a) compliance samples for certain chemical parameters, in particular copper, lead, and nickel, shall be taken at the consumers' tap without prior flushing. A random daytime sample of one litre volume is to be taken. As an alternative, Member States may use fixed stagnation time methods that better reflect their national situation, such as the average weekly intake by consumers, provided that, at the supply zone level, this does not result in fewer cases of non-compliance than using the random daytime method;
 - (b) compliance samples for microbiological parameters at the point of compliance shall be taken and handled according to EN ISO 19458, sampling purpose B.

3. Samples for *Legionella* in domestic distribution systems shall be taken at risk points for proliferation of *Legionella*, points representative for systemic exposure to *Legionella*, or both. Member States shall establish guidelines for sampling methods for *Legionella*.
 4. Sampling in the distribution network, with the exception of sampling at the consumers' tap, shall be in accordance with ISO 5667-5. For microbiological parameters, samples in the distribution network shall be taken and handled according to EN ISO 19458, sampling purpose A.
-

ANNEX III

SPECIFICATIONS FOR THE ANALYSIS OF PARAMETERS

Member States shall ensure that the methods of analysis used for the purposes of monitoring and demonstrating compliance with this Directive, with the exception of turbidity, are validated and documented in accordance with EN ISO/IEC 17025 or other equivalent standards accepted at international level. Member States shall ensure that laboratories or parties contracted by laboratories apply quality management system practices in accordance with EN ISO/IEC 17025 or other equivalent standards accepted at international level.

For the purposes of assessing the equivalence of alternative methods with the methods laid down in this Annex, Member States may use standard EN ISO 17994, established as the standard on the equivalence of microbiological methods, or standard EN ISO 16140 or any other similar internationally accepted protocols, to establish the equivalence of methods based on principles other than culturing, which are beyond the scope of EN ISO 17994.

In the absence of an analytical method meeting the minimum performance criteria set out in Part B, Member States shall ensure that monitoring is carried out using the best available techniques not entailing excessive costs.

Part A

Microbiological parameters for which methods of analysis are specified

The methods of analysis for microbiological parameters are:

- (a) *Escherichia coli* (*E. coli*) and coliform bacteria (EN ISO 9308-1 or EN ISO 9308-2);
- (b) intestinal enterococci (EN ISO 7899-2);
- (c) colony count or heterotrophic plate counts at 22°C (EN ISO 6222);
- (d) *Clostridium perfringens* including spores (EN ISO 14189);
- (e) *Legionella* (EN ISO 11731 for compliance with the value in Part D of Annex I);

for risk-based verification monitoring and to complement culture methods, in addition methods, such as ISO/TS 12869, rapid culture methods, non-culture-based methods, and molecular-based methods, in particular qPCR, can be used;

- (f) somatic coliphages;

for operational monitoring, Part A of Annex II, EN ISO 10705-2, and EN ISO 10705-3 can be used.

Part B

Chemical and indicator parameters for which performance characteristics are specified

1. Chemical and indicator parameters

For the parameters set out in Table 1 of this Annex, the method of analysis used shall, as a minimum, be capable of measuring concentrations equal to the parametric value with a limit of quantification, as defined in point (2) of Article 2 of Commission Directive 2009/90/EC¹, of 30 % or less of the relevant parametric value and an uncertainty of measurement as specified in Table 1 of this Annex. The result shall be expressed using at least the same number of significant figures as for the parametric value referred to in Parts B and C of Annex I to this Directive.

The uncertainty of measurement laid down in Table 1 shall not be used as an additional tolerance to the parametric values set out in Annex I.

Table 1. Minimum performance characteristic ‘Uncertainty of measurement’

| Parameters | Uncertainty of measurement (See Note 1) % of the parametric value (except for pH) | Notes |
|------------|---|-------|
| Aluminium | 25 | |
| Ammonium | 40 | |
| Acrylamide | 30 | |

¹ Commission Directive 2009/90/EC of 31 July 2009 laying down, pursuant to Directive 2000/60/EC of the European Parliament and of the Council, technical specifications for chemical analysis and monitoring of water status (OJ L 201, 1.8.2009, p. 36).

| Parameters | Uncertainty of measurement (See Note 1) % of the parametric value (except for pH) | Notes |
|--------------------|---|------------|
| Antimony | 40 | |
| Arsenic | 30 | |
| Benzo(a)pyrene | 50 | See Note 2 |
| Benzene | 40 | |
| Bisphenol A | 50 | |
| Boron | 25 | |
| Bromate | 40 | |
| Cadmium | 25 | |
| Chloride | 15 | |
| Chlorate | 40 | |
| Chlorite | 40 | |
| Chromium | 30 | |
| Copper | 25 | |
| Cyanide | 30 | See Note 3 |
| 1,2-dichloroethane | 40 | |
| Epichlorohydrin | 30 | |
| Fluoride | 20 | |

| Parameters | Uncertainty of measurement (See Note 1) % of the parametric value (except for pH) | Notes |
|----------------------------------|---|------------|
| HAAs | 50 | |
| Hydrogen ion concentration pH | 0,2 | See Note 4 |
| Iron | 30 | |
| Lead | 30 | |
| Manganese | 30 | |
| Mercury | 30 | |
| Microcystin-LR | 30 | |
| Nickel | 25 | |
| Nitrate | 15 | |
| Nitrite | 20 | |
| Oxidisability | 50 | See Note 5 |
| Pesticides | 30 | See Note 6 |
| PFAS | 50 | |
| Polycyclic aromatic hydrocarbons | 40 | See Note 7 |
| Selenium | 40 | |

| Parameters | Uncertainty of measurement (See Note 1) % of the parametric value (except for pH) | Notes |
|-------------------------------|---|-------------|
| Sodium | 15 | |
| Sulphate | 15 | |
| Tetrachloroethene | 40 | See Note 8 |
| Trichloroethene | 40 | See Note 8 |
| Trihalomethanes — total | 40 | See Note 7 |
| Total organic carbon (TOC) | 30 | See Note 9 |
| Turbidity | 30 | See Note 10 |
| Uranium | 30 | |
| Vinyl chloride | 50 | |

2. Notes to Table 1

Note 1: Uncertainty of measurement is a non-negative parameter characterising the dispersion of the quantity values being attributed to a measurand, based on the information used. The performance criterion for measurement uncertainty ($k = 2$) is the percentage of the parametric value stated in the table or any stricter value. The uncertainty of measurement shall be estimated at the level of the parametric value, unless otherwise specified.

- Note 2: If the value of uncertainty of measurement cannot be met, the best available technique should be selected (up to 60 %).
- Note 3: The method determines total cyanide in all forms.
- Note 4: The value for the uncertainty of measurement is expressed in pH units.
- Note 5: Reference method: EN ISO 8467.
- Note 6: The performance characteristics for individual pesticides are given as an indication. Values for the uncertainty of measurement as low as 30 % can be achieved for several pesticides, while higher values up to 80 % may be allowed for a number of pesticides.
- Note 7: The performance characteristics apply to individual substances, specified at 25 % of the parametric value in Part B of Annex I.
- Note 8: The performance characteristics apply to individual substances, specified at 50 % of the parametric value in Part B of Annex I.
- Note 9: The uncertainty of measurement should be estimated at the level of 3 mg/l of the total organic carbon (TOC). EN 1484 Guidelines for the determination of TOC and dissolved organic carbon (DOC) shall be used for the specification of the uncertainty of the test method.

Note 10: The uncertainty of measurement should be estimated at the level of 1,0 NTU (nephelometric turbidity units), in accordance with EN ISO 7027 or another equivalent standard method.

3. Sum of PFAS

The following substances shall be analysed based on the technical guidelines developed in accordance with Article 13(7):

- Perfluorobutanoic acid (PFBA)
- Perfluoropentanoic acid (PFPA)
- Perfluorohexanoic acid (PFHxA)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorooctanoic acid (PFOA)
- Perfluorononanoic acid (PFNA)
- Perfluorodecanoic acid (PFDA)
- Perfluoroundecanoic acid (PFUnDA)
- Perfluorododecanoic acid (PFDoDA)

- Perfluorotridecanoic acid (PFTrDA)
- Perfluorobutane sulfonic acid (PFBS)
- Perfluoropentane sulfonic acid (PFPS)
- Perfluorohexane sulfonic acid (PFHxS)
- Perfluoroheptane sulfonic acid (PFHpS)
- Perfluorooctane sulfonic acid (PFOS)
- Perfluorononane sulfonic acid (PFNS)
- Perfluorodecane sulfonic acid (PFDS)
- Perfluoroundecane sulfonic acid
- Perfluorododecane sulfonic acid
- Perfluorotridecane sulfonic acid

Those substances shall be monitored when the risk assessment and risk management of the catchment areas for abstraction points carried out in accordance with Article 8 conclude that those substances are likely to be present in a given water supply.

ANNEX IV

INFORMATION TO THE PUBLIC

The information in the following points shall be accessible to consumers on-line in a user-friendly and customised way, and consumers may obtain access to that information by other means upon justified request:

- (1) identification of the relevant water supplier, the area and number of people supplied, and the method of water production, including general information on types of water treatment and disinfection applied; Member States may derogate from this requirement in accordance with Article 13(1) of Directive 2007/2/EC;
- (2) the most recent monitoring results for parameters listed in Parts A, B and C of Annex I, including monitoring frequency together with the parametric value set in accordance with Article 5; the monitoring results shall not be more than one year old, except where the monitoring frequency set by this Directive allows otherwise;
- (3) information on the following parameters not listed in Part C of Annex I and associated values:
 - (a) hardness;

- (b) minerals, anions/cations dissolved in water:
 - calcium Ca;
 - magnesium Mg;
 - potassium K;
- (4) in the event of a potential danger to human health as determined by competent authorities or other relevant bodies following an exceedance of the parametric values set in accordance with Article 5, information on the potential danger to human health and the associated health and consumption-related advice or a hyperlink providing access to such information;
- (5) relevant information on risk assessment of the supply system;
- (6) advice to consumers, including on how to reduce water consumption, where appropriate, how to use water responsibly according to local conditions and how to avoid health risks due to stagnant water;
- (7) for water suppliers supplying at least 10 000 m³ per day or serving at least 50 000 people, annual information on:
 - (a) the overall performance of the water system in terms of efficiency and leakage rates, once that information is available and at the latest on the date set out in the second subparagraph of Article 4(3);

- (b) the ownership structure of the water supply by the water supplier;
 - (c) where costs are recovered through a tariff system, information on the structure of the tariff per cubic meter of water, including fixed and variable costs and costs related to measures for the purposes of Article 16, where such measures have been taken by water suppliers;
 - (d) where available, a summary and statistics regarding consumer complaints received by the water suppliers on matters within the scope of this Directive;
- (8) upon justified request, consumers shall be given access to historical data for information under points (2) and (3), dating back up to 10 years, if available, and not earlier than ... [the end-date for transposition of this Directive].
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ANNEX V

PRINCIPLES FOR SETTING METHODOLOGIES REFERRED TO IN ARTICLE 11

Groups of materials

1. Organic materials

Organic materials shall only be made of:

- (a) the starting substances listed in the European positive list of starting substances to be established by the Commission in accordance with point (b) of the first subparagraph of Article 11(2); and
- (b) substances in relation to which there is no possibility that the substance and its reaction products are present at levels exceeding 0,1 µg/l in water intended for human consumption, unless for specific substances a more stringent value is needed taking into account their toxicity.

Organic materials shall be tested in accordance with Table 1 in line with methods for testing specified in relevant European standards or, in the absence thereof, an internationally or nationally recognised method and shall satisfy the requirements stipulated therein. For this purpose, the test results in terms of substance migration shall be converted into estimated levels at the tap.

2. Metallic materials

Only metallic materials included in the European positive list of compositions to be established by the Commission in accordance with point (b) of the first subparagraph of Article 11(2) shall be used. The limitations stipulated in the European positive list in respect of the composition of these materials, their use for certain products and the use of these products shall be complied with.

Metallic materials shall be tested in accordance with Table 1 in line with methods for testing specified in relevant European standards or, in the absence thereof, an internationally or nationally recognised method and shall satisfy the requirements stipulated therein.

3. Cementitious materials

Cementitious materials shall only be made of one or more of the following:

- (a) organic constituents listed in the European positive list of constituents to be established by the Commission in accordance with point (b) of the first subparagraph of Article 11(2);

- (b) organic constituents in relation to which there is no possibility that the constituents and their reaction products are present at levels exceeding 0,1 µg/l in water intended for human consumption; or
- (c) inorganic constituents.

Cement-bound materials shall be tested in accordance with Table 1 in line with methods for testing specified in relevant European standards or, in the absence thereof, an internationally or nationally recognised method and shall satisfy the requirements stipulated therein. For this purpose, the test results in terms of substance migration shall be converted into estimated levels at the tap.

4. Enamels and ceramic materials

Enamels and ceramic materials shall only be made of starting substances from the European positive list of compositions to be established by the Commission in accordance with point (b) of the first subparagraph of Article 11(2), after carrying out an assessment of the elements used in the composition of these materials.

Enamels and ceramic materials shall be tested in accordance with Table 1 in line with methods for testing specified in relevant European standards or, in the absence thereof, an internationally or nationally recognised method and shall satisfy the requirements stipulated therein. For this purpose, the test results in terms of substance migration shall be converted into estimated levels at the tap.

5. Exceptions for assessment of materials used in minor and assembled components

For assembled products: minor components, parts and materials shall be described in detail and testing shall be reduced accordingly. For this purpose ‘minor’ refers to a level of influence on the quality of water intended for human consumption that does not require full testing.

Table 1. Testing related to material types

| Criteria | Organic (See Note 1) | Metallic (See Note 2) | Cementitious | Enamels and ceramic materials |
|--|----------------------|-----------------------|--------------|-------------------------------|
| European positive lists | | | | |
| European positive list of starting substances for organic materials | X | N.N. | X | N.N. |
| European positive list of accepted metallic compositions | N.N. | X | N.N. | N.N. |
| European positive list of constituents for cementitious materials | N.N. | N.N. | X | N.N. |
| European positive list of compositions for enamels and ceramic materials | N.N. | N.N. | N.N. | X |
| Organoleptic tests | | | | |

| Criteria | Organic (See Note 1) | Metallic (See Note 2) | Cementitious | Enamels and ceramic materials |
|---------------------------------------|----------------------|-----------------------|----------------|-------------------------------|
| Odour and flavour | X | N.N. | X | N.N. |
| Colour and Turbidity | X | N.N. | X | N.N. |
| General hygiene assessments | | | | |
| Leaching of total organic carbon | X | N.N. | X | N.N. |
| Surface residues (metals) | N.N. | X | N.N. | N.N. |
| Migration testing | | | | |
| Relevant parameters of this Directive | X | X | X | X |
| MTC _{tap} of PL substances | X | N.N. | X (See Note 3) | N.N. |
| Unexpected substances (GCMS) | X | N.N. | X (See Note 3) | N.N. |
| Compliance with compositions lists | N.N. | X | N.N. | X |
| Enhancement of microbial growth | X | N.N. | X (See Note 3) | N.N. |

N.N.: Not necessary

MTC_{tap}: Maximum tolerable concentration at the tap (either derived from the opinion of ECHA for the purposes of inclusion of the substance in the European positive list, or based on a specific migration limit set in Commission Regulation (EU) No 10/2011¹ and considering a 10 % allocation factor and water consumption of 2 litres per day)

GCMS: Gas Chromatography – Mass Spectrometry (screening method)

Note 1: Specific exceptions to be determined in line with point 5 of this Annex.

Note 2: Metals shall not be subject to organoleptic testing because it is generally accepted that if the parametric values set out in Annex I are met, organoleptic problems are unlikely to arise.

Note 3: Depending on the existence of organic substances in the composition.

¹ Commission Regulation (EU) No 10/2011 of 14 January 2011 on plastic materials and articles intended to come into contact with food (OJ L 12, 15.1.2011, p. 1).

ANNEX VI

Part A

Repealed Directive with list of the successive amendments thereto
(referred to in Article 26)

| | |
|---|-----------------------------|
| Council Directive 98/83/EC (OJ L 330, 5.12.1998, p. 32) | |
| Regulation (EC) No 1882/2003 of the European Parliament and of the Council (OJ L 284, 31.10.2003, p. 1) | Only point 29 of Annex II |
| Regulation (EC) No 596/2009 of the European Parliament and of the Council (OJ L 188, 18.7.2009, p. 14) | Only point 2.2 of the Annex |
| Commission Directive (EU) 2015/1787 (OJ L 260, 7.10.2015, p. 6) | |

Part B

Time-limits for transposition into national law
(referred to in Article 26)

| Directive | Time-limit for transposition |
|----------------|------------------------------|
| 98/83/EC | 25 December 2000 |
| (EU) 2015/1787 | 27 October 2017 |

ANNEX VII

CORRELATION TABLE

| Directive 98/83/EC | This Directive |
|----------------------|-------------------------------|
| Article 1 | Article 1 |
| Article 2, point (1) | Article 2, point (1) |
| Article 2, point (2) | Article 2, point (2) |
| – | Article 2, points (3) to (11) |
| Article 3(1) | Article 3(1) |
| – | Article 3(2) |
| Article 3(2) | Article 3(3) |
| Article 3(3) | Article 3(4) |
| – | Article 3(5) and (6) |
| Article 4(1) and (2) | Article 4(1) and (2) |
| – | Article 4(3) |
| Article 5 | Article 5 |
| Article 6 | Article 6 |
| – | Article 7 |
| – | Article 8 |
| – | Article 9 |
| – | Article 10 |
| – | Article 11 |
| – | Article 12 |

| Directive 98/83/EC | This Directive |
|------------------------------|--|
| Article 7(1) | Article 13(1) |
| Article 7(2) | Article 13(2), introductory wording |
| – | Article 13(2), points (a) to (e) |
| Article 7(3) | Article 13(3) |
| Article 7(4) | – |
| Article 7(5) and (6) | Article 13(4) and (5) |
| – | Article 13(6) to (8) |
| Article 8(1) | Article 14(1) |
| Article 8(2) | Article 14(2), first subparagraph |
| – | Article 14(2), second subparagraph |
| Article 8(3) | Article 14(3), first subparagraph |
| – | Article 14(3), second subparagraph |
| Article 8(4) | Article 14(5) |
| Article 8(5) | – |
| Article 8(6) | Article 14(6) |
| Article 8(7) | Article 14(4), introductory wording, point (a) |
| – | Article 14(4), points (b) and (c) |
| Article 9(1), first sentence | Article 15(1), first subparagraph, introductory wording |
| – | Article 15(1), first subparagraph, points (a) to (c) |

| Directive 98/83/EC | This Directive |
|-------------------------------|--|
| Article 9(1), second sentence | Article 15(1), second subparagraph |
| Article 9(1), third sentence | Article 15(1), third subparagraph |
| Article 9(2) | – |
| Article 9(3) to (6) | Article 15(2) to (5) |
| Article 9(7) | Article 18(1), point (e) |
| Article 9(8) | Article 15(6) |
| – | Article 16 |
| Article 10 | – |
| Article 11 | Article 20 |
| Article 12 | Article 22 |
| Article 13(1) | Article 17(1) |
| – | Article 17(2) and (3) |
| Article 13(2) to (6) | – |
| – | Article 18(1), first subparagraph, points (a) to (d) |
| – | Article 18(1), second subparagraph |
| – | Article 18(2) to (5) |
| – | Article 19 |
| – | Article 21 |
| – | Article 23 |
| – | Article 25 |
| Article 14 | – |

| Directive 98/83/EC | This Directive |
|--------------------------------------|--------------------------------------|
| Article 15 | – |
| Article 16 | Article 26 |
| Article 17 | Article 24 |
| Article 18 | Article 27 |
| Article 19 | Article 28 |
| Annex I, Part A | Annex I, Part A |
| Annex I, Part B | Annex I, Part B |
| Annex I, Part C | Annex I, Part C |
| – | Annex I, Part D |
| Annex II, Part A, points (1) and (2) | Annex II, Part A, points (1) and (2) |
| Annex II, Part A, point (3) | – |
| – | Annex II, Part A, point (3) |
| Annex II, Part A, point (4) | Annex II, Part A, point (4) |
| Annex II, Part B, point (1) | – |
| Annex II, Part B, point (2) | Annex II, Part B, point (1) |
| Annex II, Part B, point (3) | Annex II, Part B, point (2) |
| Annex II, Part C | Annex II, Part C |
| Annex II, Part D, points (1) and (2) | Annex II, Part D, points (1) and (2) |
| – | Annex II, Part D, point (3) |
| Annex II, Part D, point (3) | Annex II, Part D, point (4) |

| Directive 98/83/EC | This Directive |
|--|---|
| Annex III, first subparagraph | Annex III, first subparagraph |
| – | Annex III, second subparagraph |
| Annex III, second subparagraph | Annex III, third subparagraph |
| Annex III, Part A, first and second subparagraph | – |
| Annex III, Part A, third subparagraph, points (a) to (f) | Annex III, Part A |
| Annex III, Part B, point (1), first subparagraph | Annex III, Part B, point (1), first subparagraph |
| Annex III, Part B, point (1), second subparagraph | – |
| Annex III, Part B, point (1), third subparagraph and Table 1 | Annex III, Part B, point (1), second subparagraph and Table 1 |
| Annex III, Part B, point (1), Table 2 | – |
| Annex III, Part B, point (2) | Annex III, Part B, point (2) |
| – | Annex III, Part B, point (3) |
| Annex IV | – |
| Annex V | Annex VII |
| – | Annex IV |
| – | Annex V |
| – | Annex VI |