

FLUORIDATION – FAQs

Why is fluoridation of water supplies carried out?

The fluoridation of piped public water supplies is a public health measure designed for the prevention and control of dental decay. The legal basis for fluoridation of public water supplies is set out in the Health (Fluoridation of Water Supplies) Act 1960 and the Fluoridation of Water Supplies Regulations 2007 (SI 42 of 2007)

The Health (Fluoridation of Water Supplies) Act 1960 provides for the Health Service Executive to arrange for the fluoridation of public water supplied to the public by Sanitary Authorities (now Irish Water). Part 2 of SI 42 places statutory obligations on Sanitary Authorities / Irish Water, as agents for the HSE, in respect of fluoridation of public water supplies.

More information on fluoridation can be sourced on the FAQ section of the Irish Expert Body on Fluorides and Health's website: <http://www.fluoridesandhealth.ie/faq/>

1. Where is the fluoride that is added to the public water supply sourced?

The fluoride is sourced as a primary product mined directly from a raw material source – the mineral fluorospar as calcium fluoride (CaF₂). It then goes through a purification process to conform to tightly controlled specifications under the requirements of CEN Standard I.S.EN 12175:2013 to produce Hydrofluosilicic acid (HFSA). At present, this process is conducted in Spain by Derivados del Fluor (DDF). Chemifloc Ltd is the company currently contracted by the HSE for the supply and delivery of Hydrofluosilicic acid at concentration specified in Irish legislation for the purpose of water fluoridation

2. What is the chemical used for water fluoridation

The chemical used for water fluoridation is Hexafluorsilicic acid, also known as Hydrofluosilicic acid (HFSA).

3. What are the procedures followed for the fluoridation of public water supplies

The procedures followed for the fluoridation of public water supplies are set out in the Code of Practice on the Fluoridation of Drinking Supplies 2007. The Health (Fluoridation of Water Supplies) Act 1960 provides for the HSE to arrange for the fluoridation of water supplied to the public by Irish Water. Section 4 (a) provides regulations for Irish Water to act as agents for the HSE by arranging for fluoridation of water supplied to the public. The Health Service Executive is obliged to cover any expenses incurred by any Local Authority for providing, installing and maintaining equipment for the fluoridation of public water supplies

4. What costs are covered by the HSE in relation to fluoridation?

The costs covered by the HSE in relation to fluoridation are: (1) the supply and delivery of Hydrofluosilicic acid, (2) the operational and maintenance costs associated with running the fluoridation element of a water treatment plant and (3) capital costs associated with fluoridation

5. What is annual sum spent by the Health Service Executive in on the fluoridation of public water supplies under the Health(Fluoridation of Water Supplies)Act 1960

The average annual sum (what year?) spent on the fluoridation of public water supplies is in excess of €3 million

6. What is the Breakdown in of the annual cost of water fluoridation chemical and quantities

In 2013 the volume of Hydrofluosilicic acid supplied was 3,748,051ltrs at a cost of €1,311,817

7. Has the chemical used for water fluoridation been analysed?

The Health Service Executive undertakes ongoing testing of samples of HFSA independent of the supplier. The analysis of these samples is undertaken by the Public Analyst's Laboratory Dublin. The level of heavy metal contaminants has been well below the Limit of Quantitation so the issue of compliance of a heavy metal result with the specification has not arisen. Results of this independent analysis are available on request

8. Where is the fluoride added to the water?

The fluoride is added to the public water supplies at water treatment plants throughout the country by Irish Water acting as agents for the health authorities as provided for in the Health (Fluoridation of Water Supplies) Act 1960

9. How can a chemical which is not for human consumption be added to water supplies?

The principles of approval for the use of HFSA in the treatment of water intended for human consumption are no different to those relating to other chemicals used in drinking water treatment such as disinfectants and coagulants. No water treatment chemical is intended for direct human consumption in its undiluted form. The level of fluoride in drinking water in Ireland has been set at between 0.6-0.8 parts per million (ppm) or milligrammes per litre (mg/l) To achieve this, HFSA is diluted by a factor of more than one in a hundred thousand. This level of fluoride is deemed optimal for protecting the oral health of all age groups.

10. What is the level of fluoride in tap water?

The European Drinking Water Directive (98/83) sets a maximum limit value of 1.5 mg/l. The level of fluoride in Irish drinking water is set at between 0.6ppm to 0.8ppm which is less than half the maximum permitted by the EU. Irish Water provides fluoridated water to the public through public piped water supplies. Testing requirements are set out under Section 9 Part 2 – General Provisions of the Fluoridation of Water Supplies Regulations 2007 (S.I No 42 of 2007). The 2007 Regulations specify that the fluoride content of the public water supplies to which fluoride is added must be determined on a daily basis. Monthly samples are also taken from the distribution system by the HSE and analysed by the Public Analyst's laboratories. The vast majority of results are routinely within the limits set for drinking water by Irish and EU law. Currently there are no plans to reduce or end the fluoridation of tap water.

11. How much of the total Irish Water supply is fluoridated?

The most recent national audit of water treatment plants conducted from June 2008 to August 2009 identified 248 public water supplies with fluoridation facilities serving 69% of the population with fluoridated water (this is based on population figures in the 2006 census). From an international perspective fluoride has been introduced in varying degrees to countries such as U.S.A., Canada, Argentina, Brazil, New Zealand, Spain and the UK

12. Who monitors water fluoridation and how often are plants tested?

Both the HSE and Irish Water monitor water fluoridation. Irish Water conduct daily testing and the HSE conduct monthly testing (this is already answered in question 10)

13. Is every water supply in the country part of this testing programme?

No, only public water supplies with fluoridation facilities are part of this scheme.

14. If a water supply result is under the minimum level of 0.6 mg/l (parts per million) or over the maximum limit of 0.8 mg/l what process is put in place by the HSE to remedy this situation?

The process in place for non-compliance with the statutory fluoride concentration range is contained in Section 6.6.4 of the Code of Practice on the Fluoridation of Drinking Water 2007.

15. Have any complaints been made to the HSE about health problems resulting from Fluoridation?

Complaints or concerns raised by the public and received by the HSE are carefully evaluated and passed on to the Department of Health as fluoridation is a policy issue and is the responsibility of the Department of Health. The HSE is not responsible for the collation of, or response to, complaints about water fluoridation policy.

16. Will there be a review of the fluoridation policy?

The Department of Health keeps the policy of water fluoridation under constant review. This policy was reviewed by the Forum on Fluoridation, which reported in 2002. Since then the Expert Body on Fluorides and Health has continued to monitor new research on fluoride-related issues. In the light of the work of the Expert Body and other international reviews, particularly that of the European Union (SCHER, 2011) to which the Department contributed, the Department does not accept that there is a "huge amount of scientific evidence stacking up against the safety and effectiveness of water fluoridation."

The Minister of State has stressed the importance of assessing health statistics on a regular basis to address any concerns that general health may be affected by fluoridation. As part of this ongoing work, two assessments are planned. Both will be carried out with a particular focus on the Irish context:

1. A review of evidence on the impact of water fluoridation at its current level on the health of the population and on the environment will be conducted by the Health Research Board on behalf of the Department of Health in 2014.
2. A review of general health databases is planned to be supported by a public health specialist.

At present the Department is collaborating in a University College Cork-led research project, "Fluoride and Caring for Children's Teeth" (FACCT) which will specifically examine the oral health status of children and inform national policy. The study will consider the impact of changes on the oral health of children, following policy decisions relating to toothpaste use by infants and young children made in 2002 and the reduction in the level of fluoridation in drinking water in 2007. It is focusing on 5-year old and 12-year old children. The HSE has released dental staff and is providing funding to support the study.

Consideration is also being given by the Department of Health to a study on general and oral health findings in adults linked to the duration of exposure to fluoridated water as part of the Irish Longitudinal Study on Aging (TILDA).

Fluoridation policy is dealt with on the Department of Health's website at:

<http://www.doc.ie/issues/fluoridation> which links to the legislation and the website of the Irish Expert Body on Fluorides and Health.

