

# **Fluoride Free Water submission to Department of Environment, Community and Local Government Position Paper January, 2012.**

**14<sup>th</sup> February 2012**

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## **Executive Summary**

It is the duty of 'Irish Water' to provide clean, pure and healthy water for the people of Ireland and we don't have an issue with making a water charge for that. However Fluoride Free Water Group strongly objects to the fact that drinking water is deliberately contaminated with hazardous and toxic industrial waste namely hydrofluoro silicic acid ( $H_2SiF_6$ ). Various committees down the years that have been set up to advise the government on its policy of water fluoridation have studiously and singularly failed to consider the toxicity implications to the whole human body despite overwhelming evidence within the worldwide scientific community.

## **Introduction:**

Ireland may be the only country in Europe not paying household water charges but it is also the only country in Europe with 71% compulsory water fluoridation. Most of Europe's households do not pay, or receive fluoridated water, for health, legal and environmental reasons.

We believe the creation of 'Irish Water', taking the place of 34 County and City councils, must be aware of the need to stop compulsory water fluoridation as part of its regulations. Clean, safe and unpolluted water must not contain harmful cumulative toxic chemicals as those used in compulsory water fluoridation at present. Europe does not use water fluoridation and in the interest of public health Ireland must stop this policy now.

While household water charges may be necessary in the future, drinking water must not contain unnecessary pollutants which are a known danger to human, animal and aquatic life as well as being an environmental risk.  $H_2SiF_6$  is such a product which carries its own Material Safety Data Sheet (MSDS) (enc.)

## **PART 1 - Background and current law**

### **Water scarcity**

While global water demands are of importance as stated in the McKinsey Water Resources Group Report 2009, it is the **Irish supply, demand and quality** which are of immediate concern to **Fluoride Free Water**. If a large percentage or unknown quantity of the 25,000 km

of pipes in the network of Irish Public water supplies are still metal, it has to be asked why a metal corroding Class 8 acid was ever allowed to be used in them in the first place, and allowed to continue for almost 50 years. Someone in authority should have known the metal would corrode and leaching would take place. We would like to know why fluoridation, with its known damage to children's tooth enamel, and environmental pollutant ability was not mentioned once in this Government Position paper. Citizens of Europe are protected from toxic fluorides in their drinking water including Germany and Holland who forbid it in their constitutional law. Netherlands Article 11 (February 1983) "everyone shall have the right to inviolability of his person without prejudice to restrictions laid down by or pursuant to acts of parliament" Germany: Article 2 (Personal Freedoms) "Every person shall have the right to life and physical integrity. Freedom of the person shall be inviolable. These rights may be interfered with only pursuant to a law."

We recommend '*public health*' be first on the water requirements then followed by

1. Economic growth
2. Social stability
3. Environmental protection
4. Competitiveness in global market.

None of the above are sustainable with a population weakened by years of unnecessary pollutants added to drinking water by compulsory water fluoridation.

### **Structure of water services sector in Ireland**

Health (fluoridation of water supplies) Act 1960 compels 5 city councils, and 29 County Councils to add toxic fluorides plus contaminants like lead and mercury, daily to Irish public water supplies. 99% of water usage is general and commercial uses, and the remaining usage is drinking water at 1%. *Drinking water alone* is the target for fluoridation. Water needs and absorption of chemicals added to water, of new-borns, children, adults, sick and elderly are all categorised the same, under a term called 'optimal fluoride level' concentration in the water. This is untrue with babies using more water per body weight than adults, and sick and elderly having a lesser ability to deal with toxins in the water than young fit adults. With regard to water fluoridation, we believe the confusion of a concentration level in the water *with safe human daily dose* is a grave error as they are not the same, as the total amount of fluoride that enters the body is dependent on the amount of water consumed. The need of a person changes depending on their age, current state of health, and use of prescribed medication, yet the water levels of toxic fluorides and its contaminants does not take this into account. We believe the 'duty of care' of 'Irish Water' in its creation, needs to take note of this. We also believe that water fluoridation is a violation of personal bodily Integrity, and could be a case for litigation in the future as is happening in the United States at present.

Even more serious is the fact that EPA Drinking Water Quality Reports have shown fluoride *exceedances* year after year since they began. Exceedances violate water quality standards and overdosing has been recorded in their reports available on line. Fluoridated water is discharged into receiving lakes and yet this Position Paper states that most of our drinking water (81.9%) comes from rivers and lakes. It is not clear if some households are receiving 'recycled' fluoridated water. If so they may be at further risk of overdosing. In older reports Environmental Protection Agency (EPA) noted that background levels of naturally occurring calcium-fluoride needed to be taken BEFORE fluoridation and that this was not done.

### **Future Needs**

Comparing Irish Water *with its toxic fluorides and contaminants* with European countries *without fluoridation* is not comparing like with like. We believe pollution is also water stress. Toxic water is water under stress. If households are being asked to pay for the cost of repair of pipes, losing water at a rate of 40% under some towns and cities, they must not be charged for any policy or substance which could potentially have caused such a leakage, make it worse or leach heavy metals into the supply. The hydrofluoro silicic acid that's added by water treatment plants to fluoridate water is both highly toxic and corrosive as shown with this incident of an accidental spillage at a water treatment plant even caused the destruction of concrete. (YouTube: <http://www.youtube.com/watch?v=oQ7P1vklpCk>)

**Enterprise performance indicators**, while important take second place to 'public health'. A strong healthy workforce can be weakened by many years of exposure to toxic fluoride substances and overdosing, which has shown up in many years of EPA Drinking water Quality Reports. We question why office of the Minister for Health, authorising water authorities to compel fluoridation, has been excluded from obtaining a licence for adding toxic fluorides into public water supplies when all other forms of toxic fluoride discharges into air and sewers, require such a licence. Pharmaceutical, chemical, food processing industries listed alongside agri-food, fisheries, and forestry sectors requiring water, need clean unpolluted water, **but people need it first**. Ending compulsory water will enhance the health of the people, staff, industries and environment.

### **Climate Change**

People drink more water in hot weather. The more fluoridated water you drink the more toxic fluorides you get. The Fluoridation Forum Report 2002 stated that you retain 50% of fluorides from this water. If your kidneys are compromised in any way you retain more and this is critical for those with diabetes or the elderly whose capacity would be diminished with age.

### **Increases in population**

Central Statistics Office (CSO) birth rates will show the number of new babies born in Ireland. A large percentage of them will be born in areas of fluoridated water which comprises 71% of Ireland. It is unconscionable to expose any new baby to toxic chemicals in

the public water supply for any reasons due to their vulnerability. If population increases as the position paper quotes, the situation is even graver with increased numbers being exposed.

### **Water Framework Directive**

Water Services Investment programme must include provision for ending all unnecessary, harmful chemical additions to public drinking water such as compulsory water fluoridation. The Fluoridation Forum report stated that there were no environmental guidelines for levels of fluoride in environmental waters until recently. After almost 50 years of compulsory water fluoridation this is an incredible admission. Can any water authority or 'Irish Water' in the future sanction a policy which allows so much toxicity into the water supplies, with so many known health dangers like tooth enamel damage to children, pollution of the environment, and so many more unknown side effects not yet documented here, as there have been no general health studies completed as required by law, under the Health (Fluoridation of water supplies) Act 1960.

### **Funding of water and waste water services.**

Taxpayers already fund water fluoridation. Proposed water charges will mean they will be asked to pay twice for this chemically treated water. We believe it is illegal to ask people to pay for water containing toxic chemicals harmful to health, with no prior warning of toxicity, such as those used in compulsory water fluoridation at present.

## **PART 2 -Public water Utility**

### **Independent assessment on transfer of functions to Irish Water**

Strengths, Weaknesses, Opportunities and Threats SWOT studies included strengths and weaknesses for creation of 'Irish Water'. The omission of compulsory water fluoridation and its attendant harmful side effects from this SWOT was surprising. The application of compulsory water fluoridation safely, was required in law to be *precise*. When it began in 1962 ,the stated safe level or concentration in the water by law was 0.8ppm to 1.00ppm.This was the recommended concentration for 42 years (not to be confused with the safe human daily dose) In 2002 the Fluoridation Forum report recommended that for safety, this would need to be reduced to 0.6ppm to 0.8ppm. However, the regulations were not adjusted until 2007 which meant that for a further 5 years the Irish public was receiving more than safe levels. This was excluding overdosing, listed county by county in the yearly EPA Drinking Water Quality Reports.

### **Functions of 'Irish Water'**

Water services including proposed 'Irish Water' cannot sanction use of water fluoridation which carries a MSDS attached to the agent used and no public notification of short or long term side effects.

Workers are handling a toxic product and yet we can find no toxicologist on the

Fluorine Council

Fluoridation Forum report

Irish Expert Body on Fluorides

Board of Code of Practice for Fluoridation

### **Consideration of international Comparators**

Key performance indicators did not mention the fact the Scotland has no water fluoridation, Northern Ireland has no water fluoridation and UK has only 10% fluoridation.

International models compared to Ireland omitted to say that of the 10 countries listed,

One (South Africa) fluoridation status not available,

Two countries had high levels of fluoridation

One country had only 10% fluoridation and

Six countries had no fluoridation.

Again the information was not comparing like with like.

### **Proposed model for 'Irish Water'**

The public utility proposed must cease compulsory water fluoridation. Europe does not ask its citizens to pay for fluoridated water for health, legal and environmental reasons. We suggest each local authority who has problems consider fixing them before being absorbed into a bigger entity. Local business and corporation might be more amenable to funding their local supply, keeping employment in their area using local skills and money rather than paying for upgrading services in another county.

Compulsory water fluoridation places an intolerable toxic burden on the water System. It is:

1. Economically inefficient
2. Environmentally damaging
3. Good customer outcomes are not served by forcing them to pay and use cumulative toxic chemicals no longer used in Europe in water

### **Funding**

#### **Capital requirement:**

Local money and local skills might be easier to obtain for upgrading water supplies thereby keeping employment in the area.

## **Operational Requirements**

Ending compulsory water fluoridation will cut all fluoridation operational costs, including cost of agent, shipping, transport, specially adapted rubber lined trucks, training of staff, maintenance, buildings, storage tanks, bunding (safety platforms under tanks), acid storage tanks, equipment and pumps.

## **Efficient gains**

Scottish water gains of 40% operational savings are welcomed but they have no water fluoridation. Lord Jauncey ruled many years ago that Scottish public water was not to be used as a vehicle for transporting medicine to the public. (Ref: McColl Court Case). Ending compulsory water fluoridation would release millions of euros back to the public purse.

## **Government funding**

Due to shortage of money in government spending, local services supplying local businesses might be more successful in obtaining funds from local investment which would enhance their water supply and create jobs in their locale. Ending compulsory water fluoridation will release many millions euros to feed this work.

## **Ability to access markets**

We presume 'Irish Water' would request loans for investment, and if compulsory fluoridation was stopped we believe less water toxicity, less toxic exposure for staff, financial savings, less maintenance costs, would make Ireland's water company more attractive. The Fluoridation Forum report states that the use of sodium fluoride for initial water fluoridation was stopped after a short time, when it was shown to be a health hazard to workers handling it. We do not believe any worker should be handling or adding toxic fluoridation chemicals for health and safety reasons both for themselves and consumers of public water. Its inclusion in water needs to stop for the same reasons.

## **Function of 'Irish Water'**

This proposed company will be to replace the existing water services authority for Irish drinking water and waste water services for (a) households, (b) commercial bodies and (c) industrial customers. Water fluoridation targets drinking water only and is not applicable to any of the other water uses i.e. 99% of water usage.

## **Establishment of 'Irish Water'**

We recommend establishment of 'Irish Water' with no compulsory water fluoridation as a primary duty of care to customers. Total environmental impact of fluoridation on humans, animals and aquatic life has not been available in almost 50 years of treatment of water. Its endorsement and distribution will carry grave accountability implications and responsibilities for all suppliers. Without toxic fluorides and contaminants from the agents, collection and treatment of waste water would be safer.

*Bulk provision to water sector is not drinking water where fluoridation targets, but is mainly non-consumptive uses where fluoridation is not targeted.*

Ending compulsory water fluoridation would release millions of euros to local authorities for management of supplies,

Ending compulsory water fluoridation would eliminate use of Class 8 corrosive acid reduce toxic burden of fluoridated water from households waste water use, i.e. baths, showers, general domestic use, business waste water, commercial waste water, agricultural waste water, and food processing waste water.

### **Transition strategy**

Prior to creation of 'Irish Water', new interim Board to have toxicology representative for all related toxic chemical agents used in water treatment. This expertise has been missing from fluoridation boards listed previously although the agents used were extremely toxic and cumulative.

We ask if 'Irish Water' proposed will be a state controlled company as ownership of assets will be transferred from local authorities? Will local authorities being agents of 'Irish Water' until 2017 still be responsible for quality of water and accountable for this?

### **Interaction of 'Irish Water' with other bodies**

Regulation under environment from EPA, and under economic perspective under CER is welcomed.

### **Local authorities**

Ending compulsory water fluoridation would reduce operation and capital costs to each water authority immediately.

### **Environmental Protection Agency - EPA**

Ending compulsory water fluoridation would reduce workload of EPA in monitoring fluoride and lead and other contaminants listed in the Fluoridation Forum report 2002. (H<sub>2</sub>SiF<sub>6</sub> analysis enclosed)

### **Electricity Supply Board - ESB**

Reduced pollution on water courses and reservoirs would be a benefit for wild life and aquatic life.

### **National Roads Authority - NRA**

National roads would not have to carry vehicles containing H<sub>2</sub>SiF<sub>6</sub> which would reduce risk of accidents with these vehicles. In the United States if there is an accident with toxic fluorides, it can cause major disruption to road users and nearby residents.

## Office of Public Works - OPW

Inland waterways and other amenities will benefit from ending fluoridation. Agriculture food and Marine will also benefit from omission of toxic fluorides, from agricultural water used on farms, and in food processing businesses, and reduce harm to aquatic life which specifies that this will be damaged from exposure to large volumes of  $H_2SiF_6$ . 50 years of exposure would fall into this category. We question the legality of pumping fluoridated water into schools, colleges, hospitals, nursing homes, hotels, swimming pools, and collecting commercial water rates for this water containing so many toxic chemicals harmful to health.

It must be remembered that public health comes before commercial water use.

## Part 3 - Funding the provision of water services water metering and water charges

While Ireland may be the only country in OECD where households don't pay for water, it is also the only country in Europe with compulsory water fluoridation in 71% of the supplies. European households do not pay for and are not exposed to fluoridated water, and its harmful side effects. Public health needs to be top of the agenda ahead of economy, environment, social stability and efficient water services and ending compulsory water fluoridation will make that happen much quicker.

**PROGRAMME FOR GOVERNMENT** recommends water metering for household and it is questionable whether families already in financial trouble can afford to pay for twice for fluoridated water carrying such toxicity.

Asking families to use less water is welcome but to ask them to pay twice for fluoridated water is unacceptable. The England and Wales Independent Review 2009 is quoted but it needs to be repeated that **most people in England and all of Wales do not pay for water fluoridation.**

### Ireland average water use:

Daily water use	= 150 litres fluoridated not targeted
Daily consumption	= 1.5 litres being target for fluoridation
Unconsumed fluoridated water	= 148.5 litres fluoridated chemicals flowing down drains

### Denmark with no fluoridated water

Daily water use	= 114 litres
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Daily consumption = 1.1 litres

Unconsumed water = 112.9 litres with no fluoride contamination

Estimated households 1.05 million will be served by cleaner, safer water when compulsory water fluoridation is ended. We believe the Irish public would feel more secure with 'Irish Water' if they highlighted the fact that the water contained no unnecessary toxic chemicals. It would be a selling point. We recommend that before water charges are made, compulsory water fluoridation is stopped. Northern Ireland Water Authority for Utility regulations does not charge for fluoridated water. To protect interest of customers under 'Irish Water' we recommend ending compulsory water fluoridation immediately.

Ending compulsory water fluoridation will be of benefit because

- it will reduce known damage to tooth enamel damage of children's teeth from fluoridation
- it will eliminate the pollution to the environment and aquatic life, from  $H_2SiF_6$
- it will reduce waste water toxicity
- it will reduce toxic load on bottle fed new born babies
- it will reduce high levels of thyroid disease in Ireland known to relate to poor iodine status which is caused by fluoride damaging iodine uptake.

Alternatives to metering are technical questions outside of the fluoridation issues however, the efficient costs of providing water supply are enhanced by ending compulsory water fluoridation, which will no longer be present in our drinking, general water usage, and waste water. It will no longer need to be monitored thus saving valuable monitoring costs and time and reporting for the EPA. Secure water supplies are a necessity and improved flavour, less need for filtering and better quality, less toxic discharges will aid public health, aid industry and new businesses whose staff will not be exposed to these toxins in their homes or workplaces.

**Chlorine treats the water, and fluoridation treats the person and that makes its application different.**

Personal bodily integrity is violated by compulsory water fluoridation and this is an alienable right which no can break not even the state. We believe 'Irish Water' when set up with no fluoridation as part of its regulation will be in a position to service Irish public with safer, cleaner and more hygienic water.

## **Flaw in the law**

We believe the flaw in the law Health Fluoridation of water supplies) Act 1960 is that the concentration in the water cannot be used as an indication of daily human safety.

A concentration in the water at source is not an indication of a safe daily dose absorbed in relation to:

- the amount consumed by athletes,
- construction workers on a hot day,
- someone with diabetes
- some with kidney malfunction or elderly
- the amount consumed by a new born baby when bottle fed with formula made with fluoridated water especially in areas of exceedances

The more they drink the more they get of toxic fluorides with its contaminants. All dental studies are not an indication of the rest of the body absorption of contaminants from fluoridated water and cannot be used as such. Even dental studies show increasing levels of tooth enamel damage with each passing year. Ending compulsory water fluoridation would reduce capital costs and costs for everything connected to fluoridation and reduce the replacement of all metal corrosion caused by contact with the Class 8 corrosive acid used at the moment.

European Court of Justice ruling:

ECJ ruling in 2005 (Warenvertriebs and Orthica) states that where a product appears to be both a food and medicinal product, the medicinal legislation takes precedence. They must also be subjected to pharmaceutical scrutiny and be issued with a licence. We believe the addition of toxic fluorides to drinking water changes the function from a drink to a medicinal product and as such is subject to licence. Fluoridated water has no licence. We believe fluoridated water breaches this ruling and must be stopped immediately.

## **Growing Opposition to the Fluoridation of Water Supply in Ireland**

There is growing opposition to continued fluoridation of the water supply as shown by the online petition site: <http://www.gopetition.com/petitions/reverse-mandatory-water-fluoridation-in-ireland.html> with signatures being added daily to the site. The site shows the current level of signatures and comments made by many of the signatories.

Mary Hilary, Sister Rachel Hoey, *Joan Hanrahan, Medical Herbalist/Nutritional Therapist, B.Sc.,Hons., Ciaran Mulloy, Michael McCabe*

Encs. Material Safety data Sheet (MSDS) for hydrofluoro salicic acid

Fluoridation Forum page

Dr. Waldbotts map of fluoride in soft tissue

Open Letter to Members of the Dáil Joint Committee on Health and Children, 29<sup>th</sup> March 2007

# MATERIAL SAFETY DATA SHEET



Chemifloc Ltd

## FLUROSILICIC ACID

SECTION 1 IDENTIFICATION	
Trade Marks and Synonyms (if any) <b>Fluorosilicic Acid</b>	Chemical Names and Synonyms <b>Fluosilicic Acid. Silicate-hexafluoro-dihydrogen. Hydrofluosilicic Acid</b>
Physical Form <b>Colourless Liquid.</b>	Molecular Formula <b>H<sub>2</sub>SiF<sub>6</sub></b>
Responsible Person : <b>Chemifloc Ltd, Smithstown Ind. Estate, Shannon, Co. Clare. +353 61-708699</b>	Emergency Telephone : <b>Chemifloc Ltd, +353 61-708699</b>

SECTION 2 INFORMATION ON INGREDIENTS			
Ingredients	Concentration	Classification	CAS No.
<b>H<sub>2</sub>SiF<sub>6</sub></b>	<b>10.5 - 47.0%</b>	<b>Corrosive,8, PG II.</b>	<b>16961-83-4</b>
<b>H<sub>2</sub>O</b>	<b>63.0 - 89.5%</b>	<b>NR</b>	
<b>HF</b>	<b>&lt; 1.5%</b>	<b>Corrosive,8, PG II</b>	<b>7664-39-3</b>

SECTION 3 HAZARDS IDENTIFICATION	
<b>Fluorosilicic Acid is an acute irritant to the skin, eyes and mucous membranes and lungs. The acid and its vapour are moderately toxic. Flouride poisoning effects may be delayed up to 24 hours, depending upon the flouride ion concentration</b>	
Occupational Exposure Limit (OEL) <b>TLV (as F):ppm: 2.5mg/m<sup>3</sup> (as TWA).</b>	

SECTION 4 PHYSICAL AND CHEMICAL PROPERTIES			
Appearance and Odour : <b>Colourless liquid with pungent odour.</b>			
pH	<b>0</b>	Conc:	<b>&lt;1.5% as HF</b>
Boiling Point @ 100 kPa <sup>3</sup> <b>110°C</b>	Melting Point <b>- 11. 6°C</b>	Flash Point (deg. C) <b>Not Applicable</b>	Specific Gravity <b>1. 085 - 1.495 @ 15°C</b>
Autoignition (deg. C) <b>None</b>	Flammable Limit (% by Vol. in Air) <b>None</b>	Vapour Pressure <b>3kPa<sup>3</sup></b>	
Solubility in Water <b>Totally Soluble</b>	Solubility in Other Solvents <b>N/A</b>	Oxidising Properties <b>N/A</b>	

## SECTION 5

## STABILITY AND REACTIVITY

Stability:

**Fluorosilicic Acid is stable in an aqueous solution.**

Reactivity:

**Incompatible with strong alkalis and strong concentrated acids. Reacts with oxidising agents, combustible solids and organic peroxides.**

**It forms hydrogen fluoride (HF) on contact with concentrated acids.**

**It produces hydrogen on contact with metals, e.g. steel, nickel, aluminium.**

Conditions and Materials to avoid:

**Metal, glass, stoneware, alkali and strong concentrated acids.**

Hazardous Decomposition Products:

**When heated to decomposition (105°C) it emits highly toxic and corrosive fumes of Hydrogen Fluoride, Silicon Tetrafluoride and Hydrogen gas.**

## SECTION 6

## TOXICITY DATA

Acute:	<b>Fluorosilicic Acid is an acute irritant to the skin, eyes and mucous membranes and lungs. The acid and its vapour are moderately toxic. Fluoride poisoning effects may be delayed up to 24 hours, depending upon the fluoride ion concentration.</b>
Ingestion:	<b>Severe irritant. Ingestion may cause burns of the gastrointestinal tract leading to vomiting, acidosis, bloody diarrhoea, wheezing, laryngitis, shortness of breath, headache and shock. Circulatory system may be affected with symptoms of shock, rapid, weak or no pulse, severe hypotension and pulmonary changes with dyspnea, and emphysema. In some cases, necrosis and haemorrhage of the gastrointestinal tract, liver damage and death may occur. Scarring of the gastrointestinal tract may occur in non-fatal cases.</b>
Eye:	<b>Severe irritant. Contact may result in lacrimation, irritation, pain, redness and conjunctivitis. Prolonged contact - corneal burns and possible permanent damage.</b>
Skin:	<b>Severe irritant. Prolonged contact may result in irritation, itching and possible skin rash.</b>
Inhalation:	<b>Severe irritant to the respiratory tract. Over exposure at high levels may result in mucous membrane irritation of the nose and throat with coughing, shortness of breath and pulmonary oedema.</b>
Chronic:	<b>Chronic exposure to fluoride present in Fluorosilicic Acid may lead to sclerosis of the bones, calcification of ligaments, loss of weight, anorexia and teeth disorders. At low levels, chronic exposure can lead to nose bleeds and sinus problems.</b>
Health Information:	<b>OSHA Permissible Exposure Limit (PEP): 2.5 mg/m<sup>3</sup> (as F) ACGIH Threshold Limit Value (TLV): 2.5 mg/m<sup>3</sup> (as F)</b>
Toxicity Data:	<b>LD<sub>50</sub> 200mg/kg (Oral-Guinea Pig)</b>

<b>SECTION 7 FIRST AID MEASURES</b>	
Ingestion:	<b>If conscious, give the exposed person large quantities of water. Administer calcium gluconate solution or milk. Seek immediate medical attention.</b>
Eye Contact:	<b>Immediately irrigate with copious amounts of water, while holding eyelids open for at least 15 minutes. Seek immediate medical attention.</b>
Skin:	<b>Wash affected area with copious amounts of water for at least 15 minutes. Apply calcium gluconate gel to the affected area, rub in until locally free of pain and then continue for a further 15 minutes. Apply a dressing soaked in 20% (m/m) calcium gluconate solution. Seek immediate medical attention.</b>
Inhalation:	<b>Remove affected person from exposure to a well ventilated area. Keep warm and at rest. Administer orally six effervescent calcium pills (400 mg calcium per pill) dissolved in water. Seek immediate medical attention.</b>
Further Medical Advice:	<b>Following severe exposure the patient should be kept under medical attention for 48 hours as delayed pulmonary oedema may develop.</b>

<b>SECTION 8 FIRE AND EXPLOSIVE HAZARD DATA</b>	
Flammability:	<b>Fluorosilicic Acid is non flammable and does not support combustion.</b>
Fire Fighting Protective Equipment:	<b>Wear NIOSH approved self-contained acid suit and/or approved respirator.</b>
Fire Extinguishing Data:	<b>There are no restrictions on extinguishing media in fire situations.</b>
Unusual Fire and Explosion Hazards:	<b>Reacts with many metals to produce flammable and explosive hydrogen gas. Keep containers cool with water, using spray nozzles, as decomposition will occur above 105°C and produce toxic and corrosive fumes of fluoride.</b>

<b>SECTION 9 PERSONAL PROTECTION</b>	
General Precautions :	<b>Eye and skin protection should be used when handling Fluorsilicic Acid.</b>
Ventilation Requirements :	Respiratory Protection :
<b>Adequate ventilation is essential in buildings where the material is handled or stored.</b>	<b>Not normally required. Breathing apparatus must be worn if levels exceed the recommended limit.</b>
Protective Clothing	Eye protection :
<b>PVC or rubber gloves, boots and an acid proof suit are essential.</b>	<b>Goggles or full face mask</b>

## SECTION 10 HANDLING AND STORAGE

### Handling:

**Do not inhale fumes and prevent skin contact. If pungent, irritating odour can be detected, over-exposure is occurring. Eye wash and safety shower should be available in all acid handling areas.**

**Avoid contact with incompatible materials.**

### Storage:

**Store in a cool, dry, well ventilated area away from sources of ignition. Do not store in glass or stoneware. Bulk quantities should be stored in plastic (uPVC, Polypropylene or Polythene) or rubber - lined tanks. Tanks should be vented and fitted with an overflow pipe. Tanks should be banded to contain spillage. For smaller packages double skinned HDPE plastic containers are acceptable.**

### Ventilation:

**Provide adequate and/or local ventilation to maintain vapours below 2.5 mg/m<sup>3</sup> (as F).**

## SECTION 11 SPILLAGE/ACCIDENTAL RELEASE

Small Spillage : **Wash away with large quantities of water.**

Large Spillage : **If fumes are evolved wear respiratory protection. Bund large spillages with sand, earth etc. and pump away, neutralise with soda ash then dilute with water (spray) and flush away with large amounts of water after neutralisation. Inform the local water authority if product has entered public drains or waterways.**

Personal Precautions : **Wear full protective clothing.**

Neutralising Chemicals : **Hydrated Lime or Soda Ash.**

## SECTION 12 WASTE DISPOSAL

**Neutralise with Lime and landfill in accordance with local regulations.**

## SECTION 13 ENVIRONMENTAL INFORMATION

### Environmental Fate and Distribution

**High tonnage material produced in wholly contained systems.**

**Used in the fluoridation of water supplies.**

**The substance is soluble in water.**

### Persistence and Degradation

**Degrades on heating.**

### Effect on Effluent Treatment

**Large discharges may contribute to the acidification of effluent treatment systems and will injure treatment organisms.**

### Toxicity

**Large discharges may contribute to the acidification of water and soil and will injure aquatic life and soil micro - organisms.**

## SECTION 14 REGULATORY INFORMATION

EEC Classification: **Class 8, Hazard Label: 8**

Risk Phrases: **Causes burns (R 34)**

Safety Phrases: **In case of contact with eyes, rinse immediately with plenty of water and seek medical treatment. (S 26).**

**Take off immediately all contaminated clothing. (S 27).**

**In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). (S 45).**

## SECTION 15 TRANSPORT INFORMATION

UN No.	<b>1778</b>	UN Pack. Group	<b>II</b>	ICAO/IATA Class	<b>8,II</b>
IMDG Class	<b>8,II</b>	ADR/RID Class	<b>8</b>	ADR/RID Item	<b>9b</b>

## SECTION 16 OTHER INFORMATION

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.



# Quality Control of HFSA

The analysis of hydrofluorosilicic acid at various concentrations is performed by Enterprise Ireland on behalf of the Eastern Regional Health Authority. The methods employed are as follows:

*Approximate density* - known volumes of the sample are weighed at room temperature and the approximate density is calculated.

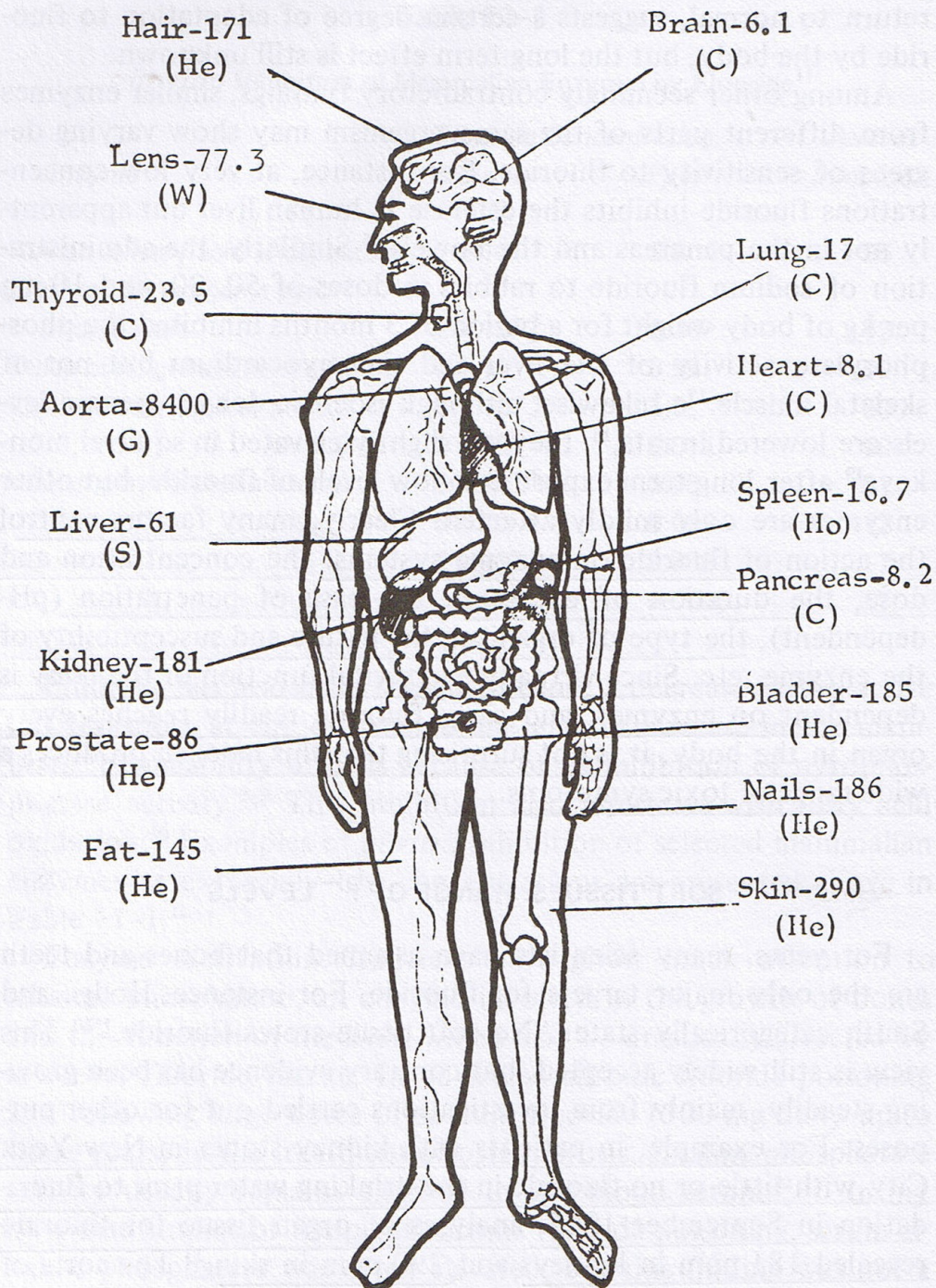
*Metals content* - Lead, arsenic, chromium, cadmium, nickel, selenium, mercury, antimony and phosphorus: portions of the sample are acidified and elements specified determined by Inductively Coupled Plasma (ICP) Spectrometry.

*Silicon content* - portions of the samples are diluted and the silicon content determined by Inductively Coupled Plasma (ICP) Spectrometry.

*Fluoride content* - the fluoride content is determined by means of the ion specific electrode.

The following results were obtained from samples taken in February 2001.

Sample Identification	Storage Tanks in New Ross					Day Tank in water plant 14%
	40%	40%	40%	14%	14%	
Approx. density	1.412	1.407	1.410	1.118	1.118	1.135
% Fluoride	34.6	35.6	34.5	12.2	11.8	11.8
% H <sub>2</sub> SiF <sub>6</sub>	43.7	45.0	43.6	15.4	14.9	14.9
% Silicon	8.8	8.7	8.7	3.05	2.98	2.84
Arsenic mg/kg	1.0	1.1	1.2	<1	<1(0.9)	<1
Mercury mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium mg/kg	0.14	0.09	0.15	4.1	5.8	0.15
Zinc mg/kg	0.05	0.04	0.08	0.07	0.07	0.08
Cadmium mg/kg	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05
Lead mg/kg	5.7	6.1	5.4	2.4	2.5	3.0
Nickel mg/kg	0.11	0.08	0.11	1.9	4.0	0.11
Iron mg/kg	2.2	1.9	2.5	15	20	2.3
Selenium mg/kg	<1	<1	<1	<1	<1	<1
Antimony mg/kg	<1	<1	<1	<1	<1	<1
Phosphorus mg/kg	62	62	62	22	22	23
Phosphate as P <sub>2</sub> O <sub>5</sub> mg/kg (calculation)	280	280	280	100	100	105



**Fig. 11-1.** Highest reported fluoride concentrations (ppm) in soft tissues. (C = Call, R.A., et al., *Public Health Rep.*, 80:529-538, 1965; G = Geever et al.<sup>25</sup>; He = Herman et al.<sup>21,46</sup>; Ho = Hodge and Smith<sup>20</sup>; S = Sauerbrunn et al.<sup>23</sup>; W = Waldbott.<sup>14,60</sup>)

Dr. Waldbott's map of where fluoride accumulates in soft tissue. (taken from G. L. Waldbott, A W Burgstahler, and H L McKinney. *Fluoridation: The Great Dilemma* (book). Coronado Press, Lawrence, Kansas 1978, 423 pp.



### SOFT TISSUES: RANGE OF F<sup>-</sup> LEVELS

For years, many scientists have assumed that bones and teeth are the only major targets for fluoride. For instance, Hodge and Smith categorically state: "No soft tissue stores fluoride."<sup>20</sup> This view is still widely accepted, but contrary evidence has been growing steadily, mainly from investigations carried out for other purposes. For example, in patients with kidney stones in New York City with little or no fluoride in the drinking water prior to fluoridation in September 1965, analyses of organ tissue for fluoride revealed 181 ppm in kidneys and 290 ppm in skin.<sup>21</sup> The aorta of an infant with extensive generalized calcification of arteries who died shortly after birth in fluoridated Ames, Iowa, contained 59.3 ppm of fluoride at autopsy.<sup>22</sup> Clinicians have recorded 61 ppm in the liver of a Texan who died with skeletal fluorosis at age 64.<sup>23</sup> In a cataract lens, removed surgically, I found 77.3 ppm<sup>24</sup> (see Fig. 11-1 below, page 152).

The highest fluoride value in soft tissue organs recorded to date is 8,400 ppm in the aortas of persons who had lived in fluoridated Grand Rapids and 2,340 ppm in the aorta of a person who had lived in an unfluoridated city in New York State.<sup>25</sup> Such high levels exceed those generally found in the bones, even in advanced skeletal fluorosis.

Observations of this nature demonstrate that fluoride is stored in soft tissue and that fluoride levels vary unpredictably from person to person and even within the organs themselves. The question then arises: how does the storage of fluoride in such organs or its passage through them affect their function? Most research on this subject in the past has dealt with doses larger than those involved through drinking artificially fluoridated water. Nevertheless, the data in the following sections warrant careful consideration since they provide a biological basis for the symptoms I have described in Chapters 9 and 10 on chronic fluoride poisoning.

**Fluoride-Free Water Group  
c/o St Raphaela's Convent,  
Upper Kilmacud, Stillorgan,  
Co. Dublin  
Tel: 01-2889559**

**29<sup>th</sup> March 2007**

**Open Letter to Members of the Joint Committee on Health and Children**

**cc: Irish News Media**

**Members of the Joint Committee**

**Deputies:**

Beverley Cooper-Flynn	Ind.	Mayo
Paudge Connolly	Ind.	Cavan-Monaghan Tech Group
Jimmy Devins	FF	Sligo Leitrim Vice-Chairman
Dermot Fitzpatrick	FF	Dublin Central
John Gormley	Green	Dublin South East Tech Gr.
Liz McManus	Lab	Dublin South
Dr. Liam Twomey	FG	Wexford
John Moloney	FF	Laois Offaly Chairman
Dan Neville	FG	Limerick West
Charlie O'Connor	FF	Dublin South West
Fiona O'Malley	PD	Dún Laoghaire

**Senators:**

Fergal Browne	(FG)	(Opposition Convenor)
Geraldine Feeney	(FF)	
Camillus Glynn	(FF)	
Mary Henry	(Ind.)	

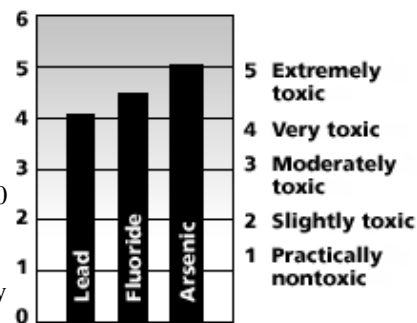
**Dear Members of the Joint Committee on Health and Children,**

I am writing on behalf of the Fluoride-Free Water Group. We are a group of concerned citizens who have been closely monitoring your recent deliberations on water fluoridation including your recent meeting of the 8<sup>th</sup> of February. We urge you to vote in favour of adopting John Gormley's Report presented to the committee recommending rejection of the government policy on compulsory water fluoridation in Ireland for the following reasons:

**1. Hydrofluorosilicic acid is a Toxin which has not been proven safe when ingested.**

- ◆ Hydro-Fluoro-Silicic Acid ( $H_2SiF_6$ ) is classified as 'extremely toxic' (ref. Roholm K. Copenhagen: Arnold Busck, 1937), its toxicity lies somewhere **between lead and arsenic**. [Illustration 1. Ref. Clinical Toxicology of Commercial Products (CTCP)]. Hydro-Fluoro-Silicic Acid that is added to the drinking water is a prescribed toxin that is listed in the Irish Poisons Regulation Act 1982.

- ◆ The Minister of Health and Children established the Forum on Water Fluoridation in Ireland in May 2000 to independently review the fluoridation of public piped water supplies and to make recommendations to the Minister. The chief objection of the mandatory fluoridation of the water supply is because of the toxicity of hydrofluorsilicic acid that is added to the water supply. However the Forum on Fluoridation



*Illustration 1: Based on LD50 data from Robert E. Gosselin et al, Clinical Toxicology of Commercial Products 5th ed., 1984*

failed to include a toxicologist on the committee to properly investigate this matter, and toxicological objections submitted to the Forum advising of the dangers of water fluoridation were ignored and seen as irrelevant or not within the scope of the study. It was also admitted in the Minutes of the Oireachtas Report 8<sup>th</sup> February 2007 that no toxicologist filled the vacant chair on the current Expert Body on Health and Fluoride panel (which has been established as a sequel to the Forum on Fluoridation). This is a fundamental flaw with the recent decision to continue to fluoridate the water supply.

- ◆ The Forum on Fluoridation has also failed to consider the biocumulative aspects of the toxin hydrofluorsilicic acid. It failed to examine the impact of 40 years of exposure of whole communities to fluoride toxicity half of which is retained in the body. (*“Roughly 50 per cent of an absorbed amount of fluoride will be excreted in the urine during the following 24 hours and most of the remainder will become associated with calcified tissue (bones and teeth), Fluoridation Forum Report, 2002.”*)

## 2. International Experts Fluoride:

For the record here is what two of many internationally accredited experts on Fluoridation and Toxicity had to say about the toxicity of fluoride:

Dr. A. K. Susheela Ph.D.:

*“From my extensive experience, I state without hesitation and with a high degree of scientific certainty, the following evaluation of fluoridation: Fluoride destroys muscle structure, muscle function and depletes muscle energy. Fluoride destroys the bone. Fluoride destroys the teeth. Fluoride destroys the RBCs (Red Blood Cells). Fluoride destroys the Blood Vessels. Fluoride destroys the lining of the stomach and intestine causing GI (gastro intestinal) problems. Evidence that is forthcoming also strongly suggests that in some individuals it causes infertility (not in all, depending on their hormonal status)”*

Dr. Suseela has been invited to speak on her experience in the field of Fluoride Research at various scientific meetings held in: (1) Japan; (2) Denmark; (3) Switzerland; (4) Kenya; (5) U.S.A. (several times); and (6) Hungary. She has guided 6 Ph.D theses in the subject of Fluoride and Health Hazards. A 7th Project is ongoing. Dr. Suseela has more than 80 scientific publications in leading Western and Indian Journals.

**Qualifications/Credentials:** 20 years doing scientific research in the field of Fluoride Toxicity and Fluorosis. Other credentials of Dr Susheela include : Professor of Anatomy (Histocytochemistry) and Chief of the Fluoride and Fluorosis Research Laboratories, at the All India Institute of Medical Sciences, New Delhi, Faculty positions at the same Institute since 1969, Ph.D from India, with Post-doctoral training under Lord Walton (Neurologist) of U.K. and Dr. Ade Milhorut of the Muscle Institute, New York, USA, Visiting Professor at the Allan Hancock Fcn. at the University of Southern California during 1974-76, Fellow of the Indian Academy of Sciences and the National Academy of Medical Sciences, won the prestigious Ran Baxy Research Foundation Award for outstanding research in medical sciences, been involved in teaching medical students of all levels and carrying out research and guiding research in the field of muscle diseases and Fluorosis for more than 20 years. She has convened an International Conference on Fluoride and Fluorosis research in India in 1983. She has edited a book on Fluoride Toxicity during 1985.

Another eminent researcher , Dr. Hardy Limeback B.SC., Ph.D. in Biochemistry, D.D.S., head of the Department of Preventive Dentistry for the University of Toronto, and president of the Canadian Association for Dental Research. Dr. Limeback is Canada's leading fluoride authority and, until recently, was Canada's primary promoter of the fluoridation of water. In April 1999, Dr. Limeback announced a dramatic change in his attitude to water fluoridation:

*“because of the cumulative toxic properties of fluoride, the detrimental effects on human health are catastrophic! In research we have discovered that residents of cities that fluoridate have double the fluoride in the hip bones vis-à-vis non-fluoridated population. Worse, we discovered that fluoride is*

*actually altering the basic architecture of human bones. Half of all ingested fluoride remains in the skeletal system and accumulates with age."*

*Dr. Hardy Limeback met with the Forum on Fluoridation during their deliberations in 2001 and made a presentation in person to the committee recommending the rejection of water fluoridation on health grounds*

### 3. Dental Fluorosis

Promoters of water fluoridation admitted in public that, they knew 'from the word go' that one of the known side effects is 'dental fluorosis' which is **irreversible tooth enamel damage to children's teeth**. (Minutes of Joint Dail Committee on Health and Children, 10<sup>th</sup> July 2003). Levels of dental fluorosis are increasing in Ireland (Fluoridation Forum Report 2002 page 106). Fluorosis is a symptom of fluoride toxicity. Fluorosis fundamentally causes a change in the structure of teeth. Evidence of fluorosis exists in 40% of 15 year old children in the state (North South Study, 2003). The State currently does not compensate for this damage, it may be liable in the future, as the public were not told of this side effect or other adverse side effects now emerging.

The ADA (American Dental Association) in November 2006 issued a warning to parents that they should consider using low or non-fluoridated water for re-constituting baby formula, in the United States. There is a clear duty of care to Irish parents also who are entitled to the same information for the health and safety of their newborn babies and also for informed choice. ( Ref: ADA Nov. 2006 publication <http://ada.org/prof/resources/pubs/adanews/adanewsarticle.asp?articleid=2212>)

### 4. Ireland is the Only Country in the EU with Mandatory Water Fluoridation

The following EU countries have now reversed their policy of water fluoridation (or never introduced water fluoridation) due to concerns primarily about health:

Country	Year Water Fluoridation Ceased	Reason/Comment
Sweden	1971	"Drinking water fluoridation is not allowed in Sweden...New scientific documentation or changes in dental health situation that could alter the conclusions of the Commission have not been shown." ( <i>Gunnar Guzikowski, Chief Government Inspector, Livsmedels Verket -- National Food Administration Drinking Water Division, Sweden, February 28, 2000</i> )
Germany	1971	Generally, in Germany fluoridation of drinking water is forbidden. The relevant German law allows exceptions to the fluoridation ban on application. The argumentation of the Federal Ministry of Health against a general permission of fluoridation of drinking water is the problematic nature of compuls[ory] medication." ( <i>Gerda Hankel-Khan, Embassy of Federal Republic of Germany, September 16, 1999</i> )
Holland	1976	"From the end of the 1960s until the beginning of the 1970s drinking water in various places in the Netherlands was fluoridated to prevent caries. However, in its judgement of 22 June 1973 in case No. 10683 (Budding and co. versus the City of Amsterdam) the Supreme Court (Hoge Road) ruled there was no legal basis for fluoridation. After that judgement, amendment to the Water Supply Act was prepared to provide a legal basis for fluoridation. During the process it became clear that there was not enough support from Parlement [sic] for this amendment and the proposal was withdrawn." ( <i>Wilfred Reinhold, Legal Advisor, Directorate Drinking Water, Netherlands, January 15, 2000</i> )
Denmark	1977	"We are pleased to inform you that according to the Danish Ministry of Environment and Energy, toxic fluorides have never been added to the public water supplies. Consequently, no Danish city has ever been fluoridated." ( <i>Klaus Werner, Royal Danish Embassy, Washington DC, December 22, 1999</i> )
France	1980	"Fluoride chemicals are not included in the list [of 'chemicals for drinking water

		treatment']. This is due to ethical as well as medical considerations." ( <i>Louis Sanchez, Directeur de la Protection de l'Environnement, August 25, 2000</i> )
Austria	Water Fluoridation Never Introduced	"Toxic fluorides have never been added to the public water supplies in Austria." ( <i>M. Eisenhut, Head of Water Department, Osterreichische Vereinigung fuer das Gas-und Wasserfach Schuberring 14, A-1015 Wien, Austria, February 17, 2000</i> )

Source: Fluoride Action Network, <http://fluoridealert.org/>

Other countries which have abolished water fluoridation are: Hungary, Luxembourg, Czech Republic, Switzerland, Finland, Norway, Iceland, Belgium and Northern Ireland. Basel in Switzerland is the last city in mainland Europe to stop fluoridating its water after 40 years on the grounds that fluoridation was ineffective in reducing dental decay and caused an increase in dental fluorosis.

The Forum on Fluoridation failed to explain why Ireland was the only country promoting mandatory water fluoridation in Europe. It did not seek to examine why most other European countries have removed fluoride from water on health grounds.

## 5. Fluoride Deception / Scandal Potential?

It has been suggested that there are strong international vested interests who would suffer financially from the cost of accidental fluoride pollution as it is expensive to clean up such pollution and deal with legal claims arising from injury due to exposure to fluoride. Many process industries are required to remove fluorides from factory gas emissions in order to comply with European Environmental air standards. Water fluoridation has allowed these companies to profitably dispose of their waste fluoride as an additive to the water supply. Otherwise disposal would require an environmental license together with expensive disposal costs. Waste fluoride has been associated with the fertilizer industry, aluminium smelting and nuclear processing.

An internationally renowned investigative reporter claims the active promotion of water fluoridation in part of a deliberate campaign of deception that minimises the liability of fluoride polluters to legal prosecution. Chris Bryson, formerly of the BBC, is an investigative reporter who has written a book entitled "The Fluoride Deception". In the book he lays out the evidence for powerful vested interests promoting water fluoridation.

*"Fluoride science is corporate science, fluoride science is DDT science, it's asbestos science, it's tobacco science."* - Chris Bryson, formerly of the BBC Reporter

It is a matter of record that several internationally renowned scientists and toxicologists have been fired from privileged positions and have had their careers jeopardized after publishing scientific papers highlighting the toxicity of fluoride and danger to health.

*"The Public Health Service, unfortunately, has locked itself into a position where it has made this statement on the record that there is absolutely no hazard to fluoridating public water supplies and the matter is closed. Now, that, of course, is immediately an unscientific approach."* Ralph Nader, Consumer Advocate, 1971

*"We are left with compelling evidence that powerful interests with high financial stakes have colluded to prematurely close honest discussion and investigation into fluoride toxicity."* - Dr. Sheldon Krimsky, Tufts University, August 16, 2004.

A video documentary of Chris's book is available to view on the internet through Google Video (enter search for 'Fluoride Deception' at <http://video.google.com/>) or click the following link: <http://video.google.co.uk/videoplay?docid=7319752042352089988&q=Fluoride+Deception>



### **Alternative Dental Health Strategy?**

We do however share the desire to promote dental health. There is definite link between dental cavities and sugar consumption per capita. Ireland has an above average consumption of sugar with 43 kg per person per year in 2002 (WHO Oral Health Statistics). The Report on the Forum on Fluoridation (2002) acknowledges: *“There is unequivocal evidence to show that the frequent consumption of sugars is a major cause of dental decay. ... Recent data on Irish dietary habits reveal that the consumption of sugary foods and drinks is alarmingly high in the Irish population. ... Many people, including children and adults, engage in almost ongoing consumption of foods and drinks sweetened with sugar throughout the day.”* It is somewhat surprising that there hasn't been a greater emphasis in seeking to reduce sugar consumption per capita particularly among children.

### **Conclusion**

The Irish public has thankfully discovered many scandals over the last 15 years such as the planning scandal, the political corruption scandal, the hepatitis in the blood bank scandal. Now we want to bring to your attention one of the longest scandals to date: the fluoride scandal. The state should not oblige anyone to unknowingly take a poison by drinking water.

As legislators you hold an important responsibility and Duty of Care to legislate responsibly to promote the health of Irish citizens. We strongly urge you to support John Gormley's proposal and reverse the controversial and misguided policy of forcibly poisoning the Irish people through the mandatory addition of fluoride to drinking water.

Yours Sincerely,

Dr. Don MacAuley,  
Sr. Rachel Hoey,  
J. Brennan,  
M. Quinn,  
Joan Hanrahan  
C. Mulloy,  
M. McCabe,  
M. Hilary,  
M.T. Lyne,

Fluoride Free Water Group

*The Fluoride Free Water Group has been in existence since 1999. It campaigns against the mandatory fluoridation of the water supply.*

*Online internet petition and comments by concerned citizens against mandatory water fluoridation:*  
[www.gopetition.com/online/10199.html](http://www.gopetition.com/online/10199.html)