



Debunking the

***'HFSA Dissociates 100%,
No Need for Toxicology Studies'***

**Argument
of Fluoridation Advocates**

Hydrofluorosilicic acid (HFSA), which is often sourced from the phosphate fertilizer industry's smokestacks (hazardous waste), is a fluoridation chemical added to tap water in many communities and framed by some as "*free dental care for the poor*".

For years, safe water advocates have sought from Public Health officials the toxicology studies needed to show that HFSA is safe for human consumption over a lifetime for all members of a community when added to municipal tap water. No studies have ever been provided, even by NSF.

<http://www.fluoridefreepeel.ca/wp-content/uploads/2013/07/Health-Canada-FOI-Response-Letter-June2014.pdf>

Public Health Staff claim there is no need for toxicology studies because HFSA dissociates 100% in drinking water, therefore the public do not come in contact with it. This assertion is not supported by the scientific literature, including the 2006 Michigan study by Finney et al, often cited by Staff. (<http://www.ncbi.nlm.nih.gov/pubmed/16683594>).

Further, Staff states that the resulting levels of individual toxins are within allowed limits and hence safe.

1975: Westendorf found that under physiological conditions, dissociation of silicafluorides was no more than 66% in the concentration range considered optimum for fluoridated water. This study has not been disputed in the peer-reviewed literature.

2001: Senior EPA research staff acknowledged that their *“longstanding confidence in the “virtually total” dissociation of SiFs (silicofluorides) may have been misplaced.”* <http://fluoridealert.org/studies/westendorf-foreword/>

2006: Finney et al used a higher-than-pharmaceutical grade HFSA (rather than industrial grade toxic waste) and ultrapure deionized 'Nanopure' water devoid of impurities (rather than tap water). This does not remotely reflect the reality of fluoridation, hence it does not justify the lack of proper toxicological studies.

Further, it has been demonstrated that:

- **dissociation depends on a number of factors such as temperature, presence of other substances (metal cations), water hardness and most importantly pH, as shown in the Michigan study, and**
- ❖ **re-association may occur under acidic pH conditions (see Urbansky, 2002 and Morris, 2004), for example in our gut or in acidic beverages such as tea or coffee prepared using fluoridated water, and**
- ❖ **Mullenix, in 2014, stressed the potential generation of *'decomposition products with toxicity greater than that of the original compounds'*.**

**THIS SLIDE IS FROM DECLAN WAUGH, Chartered Environmental Scientist
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At normal stomach pH range additional peer reviewed studies have found silicon tetrafluoride, (SiF₄) acid molecules.

Gabovich RD; "Fluorine in Stomatology and Hygiene"; translated from the original Russian and published in Kazan (USSR); printed by the US Govt Printing Office on behalf of the Dept of Health Education and Welfare. US Public Health Service, National Institute of Dental Health; DHEW pub no (NIH) 78-785, 1977

Roholm K; "Fluorine Intoxication; A Clinical-Hygiene Study"; H. K. Lewis & Co. Ltd, London; 1937

Lewis RJ, jr.; "Hazardous Chemicals Desk Reference": Van Nostrand Reinhold; Fourth Edition.

Matheson Gas Products; 30 Seaview Drive, Secaucus, NJ; "Effects of Exposure to Toxic Gases" and MSDS for CAS # 7783-61-1; created 1/24/89.

Voltaix, Inc.; Material Safety Data Sheet for Silicon Tetrafluoride (SiF₄).

Rumyantseva GI et al; "Experimental Investigation of The Toxic Properties of Silicon Tetrafluoride"; *Gig Sanit* ;(5):31-33, 1991

And, even if HFSA did fully and permanently dissociate in tap water, allowed limits of individual toxins do not ensure safety.
Rather, they take into account the difficulty & expense in keeping toxins at levels that are completely safe.

HFSA's contaminants are many, including arsenic (As) & lead (Pb): <http://www.fluoridefreepeel.ca/wp-content/uploads/2013/07/20130705121108426.pdf>

An MCLG (Maximum Contaminant Level Goal) is the maximum level in drinking water at which no known or anticipated adverse human health effects would occur. The EPA's MCLG for arsenic & lead is ZERO:

<https://www.epa.gov/ground-water-and-drinking-water/table-regulated-drinking-water-contaminants>

World Health Organization: "*There is no known level of lead exposure that is considered safe.*"

<http://www.who.int/mediacentre/factsheets/fs379/en/>

Health Canada: "*Because arsenic can cause cancer, every effort should be made to keep arsenic levels in drinking water as low as possible*".

<http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/environ/arsenic-eng.php>

Further, Mullenix, in 2014, stressed the possibility of synergistic effects between various contaminants, which would imply an underestimation of health risks:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4090869/pdf/oeh-20-02-157.pdf>

Roger D. Masters & Myron J. Coplan have compiled a bibliography listing publications on Silicofluorides, Neurotoxicity and Behaviour dealing with lead uptake in blood:

<http://www.fluoridefreepeel.ca/wp-content/uploads/2013/07/Roger-Masters-Bibliography-Publications-on-Silicofluorides.pdf>

[Note: Here is a rebuttal from Roger D. Masters, Nelson A. Rockefeller Professor of Government, Emeritus, Research Professor in the Department of Government at Dartmouth, to a claim made by the Medical Officer of Health in London, ON, Dr. Christopher Mackie, that industrial grade HFSA is safe in tap water. This rebuttal focuses on the issue of lead uptake.

<http://www.fluoridefreepeel.ca/roger-masters-rebuttal-to-hfsa-review-from-dr-christopher-mackie/> 17

Even if HFSA had no fluoride present, it would be dangerous to put it in tap water. With the complex chemical reactions and possible reactions with both organic and inorganic compounds, HFSA in tap water creates a very dangerous situation which can develop many non-fluoride compounds which in themselves can be carcinogenic/neurotoxic.

**Safety studies are absolutely required.
It is reckless not to have them.**



Message for Fluoridating Municipalities:

Whoever is responsible for your Municipality's determination that toxicology studies are not necessary has misled you.

And YOU cannot un-know what you now know.

**Do the right thing.
END FLUORIDATION NOW.**

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