Aluminum Chemistry

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Aluminum is present in the earth at roughly 8.8 % - mostly in the form of bauxite, a complex of hydroxo oxide species. It integrates readily in a silica lattice as a trivalent cation. Aluminum has been thought to play only a minor role in biological chemistry, but it now has been linked to Alzheimer's disease, a degenerative brain disorder.

Aluminum metal is produced from bauxite in a highly energy intensive process, where some of the byproducts like fluoride have been spread into the environment for dispersal. The idea that fluoridation is a benefit to humanity has now been debunked, but yet many municipalities still continue to provide it as a public benefit.

Recently, there have been elevated levels of aluminum, barium and strontium reported in Mt. Shasta snow melt that has been thought to be coming from chemtrails. The question of why is being debated: Michael Murphy is producing a follow-up to his *What in the World are they Spraying* movie to inquire as to the why. Whether it is geo-engineering or a massive eugenics program, this spraying should be stopped.

There may be another valid explanation. Aluminum has many soluble forms and it is entirely possible that the atmosphere is saturated with more aluminum that is solvated in the water layers, including the jet stream. We think of these layers as air, but if the earth is nearly 9% aluminum, why wouldn't there be a similar composition dissolved in liquid vapor or plasma layers in the atmosphere. The concentrations that we are seeing could be from long term build-up of general societal industrialization – many factories have emitted many metals in low concentration over 150 years, not to mention the high energy aluminum industry

itself. Plus how many backyard bonfires are volatilizing aluminum from foil and packaging products.

This hypothesis could be tested by collecting samples from different heights (at different locations) using weather balloon technology and remote sensors. There is enough public domain NASA technology available that good numbers should be readily available (or maybe NOAA already has such data?)

Anyway, let's talk specific aluminum chemistry.

Chemistry Refresher – An acid is formally defined as having pH < 7 – while alkaline or basic occurs when pH > 7, thus more acidic means lower pH. Amphoteric compounds exhibit both acidic and basic properties, generally changing as a function of pH. Now let's relate that to physical molecular terms. The more protons a compound has, the more acidic it will be. The term proton refers to a hydrogen ion, which is a bare proton. Bases add protons and then take the form of an acid, while acids release protons and become bases. The pH is the negative log of the free hydrogen ion concentration. $pH = - \log[H^+]$ This is measured in water – ground pH is determined by stirring soil with water and measuring the resulting pH.

Alumina is the only stoichiometric oxide of the element Aluminum – the formula is Al_2O_3 . There are several different geometric forms of alumina that have different packing structures – tetrahedral or octahedral arrays of oxygen atoms arranged about an aluminum center – extending in multiple directions. There are also several hydrated forms of alumina, including boehmite, Al(O)OH, and aluminum hydroxide or gibbsite, $Al(OH)_3$. The form OH^- , called hydroxide, is present only in basic compounds and thus implies higher pH. All are grouped into the ubiquitous category alumina as a means of confusion to the general public. After all, if people understood simple chemistry, they might not have a need for chemists to decipher the facts.

Now let's explore what happens when water is in the system. The aquo ion $[Al(H_2O)_6]^{3+}$ is considered a weak acid. This means that it can protonate bases, producing $[Al(H_2O)_5OH]^{2+}$. This happens under physiological conditions. Other species that exist include several clusters of aluminum and hydroxide ions, where the hydroxide bridge between aluminum ions and the waters cluster around the

outside. The clusters tend to have same even numbers of aluminum ions. It is my hypothesis that these clusters in biological systems precipitate in the blood stream causing plaques and leading to arteriosclerosis, fiber myalgia and other circulatory system diseases. Aluminum ions are also known to bind to physiologically important compounds like ATP and blood serum proteins.

The trivalent aluminum ion can displace divalent ions in proteins and enzymes. When aluminum is attached to an active site, the protein has to maintain charge balance by releasing another positive ion, generally either a sodium or a potassium ion, in the nearby vicinity. This action results in a hole within the folded structure – nature abhorring a vacuum allows the protein media to expand into the hole. Get enough holes and 1) it starts to look like molecular Swiss cheese and 2) the proteins unfold out of their regular conformations and start acting differently. The results are prions and diseases like CJD and chronic wasting disease (mad cow) are becoming more prevalent.

The chemistry described here came directly from Advanced Inorganic Chemistry: Cotton, Wilkenson, Murillo and Bochmann 6e, a textbook published in 1999 by John Wiley and Sons. The application to physiology is implied in the text and expanded by my personal knowledge but had not passed the litany of peer review, because it is counter to the information published by the biochemical professions. The realm of nutritional science really needs to become better grounded in basic chemistry, as the medical profession now appears to this author as a giant eugenics program led by the big pharm culture.

Now to address the specific, *the chemtrails patent suggests using* Al_2O_3 – the form of the compound in the stratosphere does not necessarily have to be the form in the spray (or dissolved in the aqueous dominated jet stream). Al_2O_3 is very inert – it is the stable resting place for aluminum, but as seen in CWMB, it does have some chemistry when wet – mostly driving things to basic pH. This means it draws protons, which can come from water in the presence of aluminum. This would get to the same chemistry as that of the aquo ion coming from the opposite direction (reduction rather than oxidation). We live in an oxidizing environment, but there are many different compounds that are specific rather than general and you can have things that will reduce, yet still exist in oxidizing environments. Also some compounds, especially these aluminum ion oxo intermediates are amphoteric

– exhibiting both acid and base properties at the same time (again very micro-environment dependent).

GMO seeds made for acid soil will be a flop in soil that is higher in pH than 4.5. Chemtrails turn soil alkaline, so the seeds are not intended for chemtrail alkaline soil. The amount of alumina in the atmosphere is insignificant as to the amount of aluminum already in the ground and does not have the volume of material to significantly change the pH of that ground. Just think of how much lime farmers have to put on their fields just to alter the pH by fractions of a pH unit. It seems that things that make the plants draw aluminum from the ground into the plant are not to the plants benefit and so that doesn't happen naturally. The patent, which is very complex, makes claims that cannot be questioned without great expense and technical difficulties. I fully believe that the patent system is used to hide information rather than to elaborate it and that we need to open source everything.

As evil as Monsanto is, the aluminum resistant seed patent for acid soils does not belong to them....it is registered to our very own USDA and the Brazilian government's equivalent: This is a non-sequitor; as we all know how inbred the Monsanto is with the federal government – with D. Rumsfeld's influence being very much felt in all policy initiatives during the past 30 years. Monsanto has a revolving door into the USDA and what we know about it barely tips the iceberg. We cannot spend our time arguing about gradations of fascism – my belief is that this government is inherently illegal, does not follow the constitution that governs it and has no justification for the use of violence as force. I have zero faith in the ability of politicians and bureaucrats and even less justification for thinking they make any real difference. No, the elites are higher at the top of this pyramid that we Occupy! , but the changes are coming fast and furious.

Dr. Lenny Thyme is a free-lance scientist who uses reference books before he hits the internet for information collation. His blog is at http://howdt.blogspot.com.