



Hi Everyone

I have 50+ years of experience in the Electronic Specialty Chemicals Industry. Now I am 72 years old and in the last five years I have asked myself if I have used my knowledge to make a difference in the world. As a result, one of the key goals I set for myself in 2018 was to leave behind to this and future generations things that I have learned in the many years of working in the unique world of specialty compressed gases. I try to do this by continuing to mentor engineers and scientist in Taiwan, Korea, China and Singapore, writing safety articles, teaching safety and participating in industry/fire standards development. I have been happy to donate 25% of my time and money by participating in NFPA, CGA, ISO and SSHA committees.

I started as a laborer cleaning compressed gas cylinders in 1972 for a very small family-owned compressed gas company, Precision Gas Products. They gave me the foundation and knowledge to build a successful career as Herb Gill the owner believed that every employee had to learn every task in the company. I filled cylinders, hydrotested them, valved them, made traceable gas mixtures, analyzed them, made arsine, etc. I then went onto a successful career building Specialty Gas Facilities for Matheson Gas Products, finally becoming a Vice President with Solkatronic Chemicals in 1989. I built this into a renowned worldwide Semiconductor Gas Company that was acquired by Air Products in 1998. After my early retirement in 2009, I had an extremely successful career as a consultant with Chemically Speaking which continues today.

During this time the industry has undergone tremendous change with cylinders, valves, gas purities, packages, etc. Unfortunately, the history of the development of these devices or the root causes of the many incidents have not been formally captured and passed along to train people entering the field as to why certain decisions were made and why. For example, major incidents have occurred that forced the industry to change procedures or fill amounts to eliminate the hazard. The basis for why these have been done are rapidly being lost, the institutional knowledge is disappearing as "old timers" like myself are retiring or passing. These lessons learned are being forgotten or never learned. I am very concerned that mistakes will be made simply because the user was not aware of prior incidents. This almost happened in 2004 when the UNTDG tried to pass increased fill densities for germane.

In my career, I have been extremely lucky to have management or customers that have happily given me time as well as funds to satisfy my curiosity. Even today they have paid for many research studies on systemic problems that individual companies would not speak about issues with a new chemical. I convinced 2 companies to fund 2 years of research into hexachlorodisilane which has become invaluable with Safety and ER. In 2022 disilane dilution and air injection.

In my 50 years in the Specialty Gas Industry I have had many hands-on roles. Electronic Specialty Chemicals have many unique hazards, packages, etc. that can be the cause of incidents. Due to the extensive security surrounding any Fab event these are not shared with the public. I have over 30 confidential incident summaries/reports that I hope to distill into an article so that the lessons learned are not lost.



My articles are not comprehensive summaries of the gas or gas systems. Some summarize unique issues or incidents related to these and many happen infrequently or are due to very unique circumstances. To make users aware. Most incidents have been sanitized as to company and exact location as they have no bearing on what happened. Some of these are 2 pages or some are more than 25 page very detailed summaries. In these I want the reader to understand the reasons for changes in design, industry best practices and history.

Some of these will lead to publications, can you please copy me on these?

Learn and be safe!

I have been fortunate to have 3 key websites create a section to allow you to view and download these.

1. Dr. Christina Baxter, Hazard 3, created a space on their website <https://hazard3.com/> Eugene's Corner this will reach the Emergency Responder/HazMat audiences.
2. Semiconductor Environmental Health and Safety Association (SESHA) website <https://sesha.org/> called Eugene's Corner, this will reach the Semiconductor User audience
3. Lynne Kilpatrick, HMEEx, <https://hmexassistant.com/> This will reach the regulatory standards and code enforcement audience

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