26 Casper Berger Road, Whitehouse Station, NJ 08889
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FREE Seminar: Silane 101-107, A Comprehensive Review

Hosted by: National Renewable Energy Laboratory, Golden, Colorado

Location: Denver West - Building 7, 4th Floor

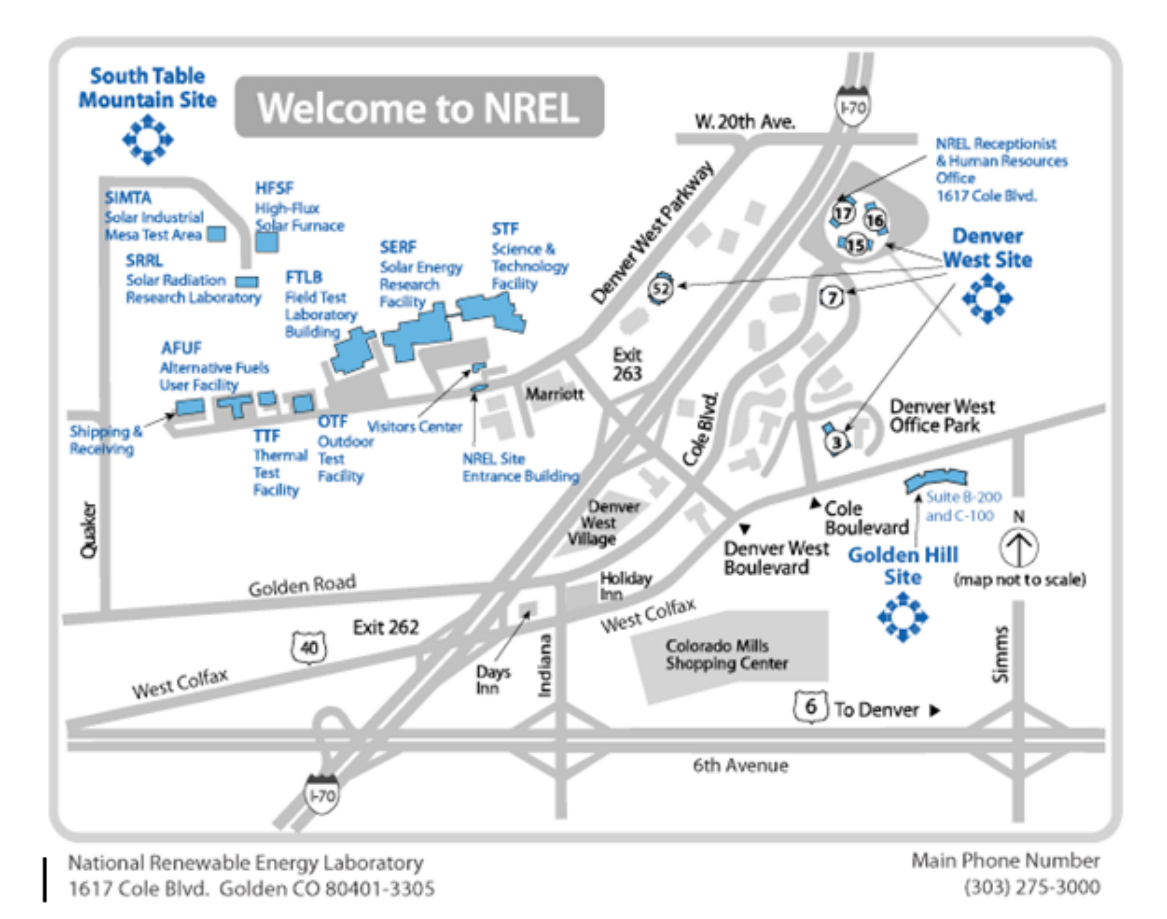
1626 Cole Boulevard, Lakewood, Colorado 80401

Date: June 3, 2010

Time: 9:00am to 4:30pm, (Lunch is 1 hour on your own)

Contact: Troy McCuskey 303-384-7880 (troy.mccuskey@nrel.gov)

Registration: Only through https://www.surveymonkey.com/s/KHTHN2W
*Everyone must register due to a limited space.



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Silane 101-107, A Comprehensive Review

Spurred by the growth in the solar cell and specialty glass coating industries, silane's use is rapidly increasing worldwide. Facilities using this gas need to be fully aware of the key issues associated with its safe use and handling.

Many newer users of silane (silicon tetrahydride) today do not have the knowledge and experience of older users such as those in the Integrated Circuit (IC), Thin Film Transistor-Liquid Crystal Display (TFT-LCD) industries. As a result, a number of major incidents involving silane have occurred at these facilities.

While silane is a high-pressure pyrophoric gas with an extremely low auto ignition temperature, it does not always immediately ignite when released. The reason for this is still not fully understood despite 40 years of research.

This class will be a comprehensive review of silane in the following areas

- Physical and Chemical Properties
- Cylinders and Valves
- Gas Cabinets and Panels
- Release Behavior
- Incidents and Key Learnings
- Safety Standards (CGA G13, SEMI S18, FM 7-7, NFPA 318)
- Emergency Response

Employees concerned with the safe use of silane should attend, including those involved in silane research, safety, emergency response, design and operations. Attendees will gain valuable knowledge of silane properties, packages, installations, incidents, root causes and emergency response efforts.

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Instructor

Eugene Ngai
Chemically Speaking LLC

Eugene is President of Chemically Speaking LLC a compressed gas safety and emergency response training and consulting corporation. Chemically Speaking LLC currently has a number of agreements to advise manufacturers, suppliers and users of specialty compressed gases, primarily in the Semiconductor, LCD or Photovoltaic industries.

Eugene has over 35 years of Specialty Gas experience in production, laboratory, R&D, engineering and safety positions. He was Vice President of Corporate Development and Technology for Solkatronic Chemicals Inc. prior to the Air Products acquisition in 1999. He retired in 2009 as Director of ER and Disposal Technology in the Product Safety Group. In these positions he spent considerable time traveling the US, Asia and Europe helping to develop and support the gas business.

Eugene has been involved with silane manufacturing and packaging since the early days of the industry in 1972 and continues to be involved as a consultant for some of the large silane manufacturers

He continues to be active in a number of worldwide industry association working groups, CGA G-13, NFPA 55, NFPA 400, SEMI EHS, SESHA and UN TC58 SC2 WG7.

He has made numerous presentations worldwide on Emergency Response, Product Safety, Gas Technology and Environment over the last 20 years. His most recent effort was on silane safety. He coordinated 1 day silane safety seminars, in Taiwan, Korea, Singapore, US and Europe since 2006 and has organized the next one scheduled for June in Munich. He continues to conduct compressed gas safety and emergency response classes throughout the world. He has taught numerous courses (1-3 day) on compressed gas safety and emergency response and has trained over 6000 customers, government agencies and employees including over 1000 Firefighters. He has taught at a number of Fire Academies worldwide, including New York, Camden County and Singapore.

Eugene has a Bachelor of Science in Chemical Engineering and a Master in Environmental Engineering

He was honored with the CGA Lifetime Safety award in 1999, Fire Dept of New York Commissioners award in 2007 and made a SESHA Fellow in 2009. He has 5 US patents for Gas Safety Devices.