

# Tube Fitting Safety Seminar



## Swagelok Formal Training Program

Tube fittings and their usage are seldom given much thought until there is a failure in the system. For most customers a failure is normally defined as a leak.

The consequences of a leak can range from a minor inconvenience to a significant event requiring immediate attention and repair. Our experience has

shown that employing the techniques provided in the *Tube Fitting Safety Seminar* can prevent most leakage.

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For additional information regarding the  
***Tube Fitting Safety Seminar***,  
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# Most technicians responsible for installing and maintaining tubing systems have never had an opportunity to learn the *correct procedure* for assembling a tube fitting.

Often tube fittings are assembled by “feel”; a technique that usually yields a connection that is under-tightened and prone to leakage. This leakage may not be evident immediately, but will surface when the connection is subjected to normal system conditions such as vibration and temperature cycling. We have seen many systems, assembled by skilled contractors, which passed initial leak tests with flying colors, develop leakage months after the installation. Small leaks in a gas system may go undetected for years. Undetected fugitive emissions from tube connections are costly in terms of increased operational costs and the potential for environmental impact.

## Each student receives:

- ✓ Several useful reference materials
- ✓ A certificate of completion that certifies completion of training on safe tube fitting selection and installation

Our class is a lecture-lab that presents Tube Fitting Safety through the use of hands-on demonstrations designed to encourage student participation. Students graduate with thorough knowledge of tube system fabrication techniques.

The class focuses on the following subjects:

- Evaluation of tube fitting design and function.
- Identification of good tube system fabrication procedures.
- Tubing is an integral part of any fluid piping system, so we explain the importance of proper tube selection, care and handling.
- A comparison of a tube system and a pipe system, and the strengths and weaknesses of both systems.
- A review of important installation techniques and examples of helpful plumbing hints.
- Discussions of safe plumbing practices.
- Demonstration of the proper application of thread sealants and lubricants.
- The pressure holding capability of typical tube



system components demonstrated through the use of a hydrostatic burst test.

- Troubleshooting exercises designed to help the student identify the most common installation errors.

The class is designed for anyone responsible for installing and maintaining leak-free tubing systems. Past participants have included: the fabricators, contractors and technicians who assemble tubing systems; the engineers and draftsmen who design them; the quality control personnel that inspect them; and the safety engineers who made sure the work environment was safe. All have benefited from participation in past classes. Procurement personnel have come away with a better understanding of tube system design and the performance characteristics of the components installed in this service.

## Class Details

The class is 1-1/2 to 2 hour lecture-lab. The length depends on the degree of interaction between student and instructor. The training can be accomplished at the customer's facility to minimize the impact of key personnel being away from the plant.

Contact Swagelok Northern California at:  
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for more class information.