

SCP TRIBUNE

Why Use a Marine Chemist for Inerting

According to NFPA 306, 2014 Edition (See Article below), an excerpt from Section 5.2.1 states the following:

"The Marine Chemist shall approve the use of the inerting medium and shall personally supervise introduction of the inerting medium into the space to be inerted, except in situations where an inerting medium has been introduced prior to the vessel's arrival at the repair facility."

The first part of this standard is clear. The Marine Chemist needs to be involved and present in the operation. The exception above might include vessels fitted with inert gas systems (IG).

Today, tank ships and some large tank barges are equipped with IG systems. In this case, the Marine Chemist would verify that spaces are properly inerted with the system, prior to issuing a certificate.

When thinking about why a Marine Chemist is helpful with the inert process, consider the following: Through the benefit of training and experience, the chemist will first want to know the scope of proposed repairs. It is possible that inerting a space is not the appropriate course for the job. For instance, external welding should not be performed on an inerted fuel or product tank below the liquid level. If a fracture runs or the bulkhead is weakened during hot work, leaking and spraying fuel is a bad mix with hot steel and welding equipment. This is especially dangerous if the work is performed in an adjacent confined space. Sadly, people have suffered just this type of accident in the past!

Selection of Nitrogen, Carbon Dioxide, or Argon gas for the inert may depend on safety, availability, and cost considerations. While Nitrogen and Argon are usually available to shipyards, Carbon Dioxide may provide the benefit of some sensory warning. For this reason, its portability, and relatively low cost, it is often used for inerting fuel tanks on boats and for inerting underground storage tanks. The chemist will consider the complications of vents clogging with scale, the potential for atmospheric changes in occupied spaces, and the final efficacy of the inert at the hot work sites.

On inland and ocean tank barges with various distillates and process chemicals, chemists routinely use liquid Nitrogen trucks equipped with evaporators and pumps. Some of these rigs are capable of delivering temperature controlled gas to the tanks, and the inert job may take from a few hours to more than 24 hours to complete. An ocean-going tank barge in Port Arthur, Texas was recently inerted by a Marine Chemist. The purge required four liquid Nitrogen trucks. Because liquid Nitrogen expands approximately 700 times in volume while changing to a gas state, you can imagine how much gas was purged through the tanks! This purge took 30 hours to complete. Although the cost of trucks and manpower may seem significant, cleaning required for this job would have approximately tripled the amount spent to provide safe conditions for hot work, and it would have taken days or weeks to complete.

While Argon is almost always available at shipyards as a welding shield gas, it is expensive and it is normally used as a gas of convenience for small jobs. Having no warning properties, and because of its relative density, the venting and disposal of this and all inert gases must be carefully considered.

With some chemical products, proper bonding and grounding are considerations during inert operations, and the increased potential for toxic exposures during tank purging must also be actively monitored. In some cases, flaring or vapor recovery may also be required.

Inerting tanks requires training, experience and teamwork. The goal of a Marine Chemist is to work with other industry professionals in protecting life, limb, and property. If the proposed work is external to a space which previously held flammable or combustible products, or the work is in an adjacent space, using inert gas may be appropriate. Helping to safely inert spaces in support of work is one of our work responsibilities as a Marine Chemist, and it can be a valuable, effective, and cost saving safety tool.



Fire Retardant Coveralls: Coverage That You Need?



What do we have here? A costume from another era? Don's uniform from work-release??

Not quite. While this set of overalls is not required by the Department of Corrections, it is becoming more popular as "flame-retardant" safety gear requested by some companies.

Every welder and fitter knows their shirt should be cotton because cotton is "flame-resistant," meaning a piece of weld spatter may burn a painful hole, but under typical conditions cotton won't catch fire or melt.

But "flame-retardant" means a fabric that, when exposed to flame or intense heat, will stop burning when the heat is taken away. This means that the fibers will not melt and drip on to the wearer.

What makes those cloth fibers "retardant"? They are impregnated with various chemicals.

Laundering can reduce the amount of chemical, making the fabrics less flame-retardant.

Many of the traditional chemicals used to treat clothing are linked to skin irritations. Additionally, some chemicals are recognized as "endocrine activators" or endocrine disruptors. Chemicals such as "halogenated bi-phenyls" can interfere with hormone systems in mammals. Endocrine disruptors can cause cancerous tumors, birth defects, and other developmental disorders.

As the technology improves, the industry may move away from "halogenated" or 'brominated' compounds. Remember to read the labels even on your clothes and choose "flame-retardant" work clothes carefully.

Pacific Marine Expo

November 20-22

Pacific Marine Expo is designed exclusively for commercial mariners from Alaska to California, so you'll find everything you need all in one convenient location. Come check out the latest in equipment, propulsion, builders, suppliers, new products and fresh solutions.

You can register online at:

<https://www.xpressreg.net/register/pmex113/landing.asp?sc=&VIPCode=&EmaillID=&lang=en&hkey=&spk=&source=&medium=&campaign=>

Follow-Up on SDS

September's "Ask A Chemist!" column mentioned that not every hazardous chemical will have a Workers' Right to Know Safety Data Sheet (SDS).

At the end of the article, we asked the related question, "Which agency do you think might regulate the transfer, storage and use of a chemical classed as a pesticide?"

Answer: A pesticide, fumigant, or rodenticide aboard a vessel will require an EPA label and EPA notification. It is, therefore, not OSHA's problem and will not have an SDS.

Workers' Right to Know (1910.1200) is an OSHA General Industry regulation. The regulatory giant that regulates pesticides is the EPA and they have precedence over OSHA.

NFPA 306 - 2014 Edition

The new 2014 NFPA 306 (Standard for the Control of Gas Hazards on Vessels) was published in late September, though it officially went into effect on June 17, 2013.

NFPA 306 is the primary regulation that tells Marine Chemists and Shipyard Competent Persons the rules about how to decide if a tank is "Safe to Enter" and/or "Safe for Hot Work."

The big change in the 2014 edition is the definition of hot work. It now includes "...any operation that raises the temperature of the work piece equal to or greater than 400 degrees Fahrenheit...".

If you want your own copy of NFPA 306, you can purchase it from the NFPA's website: <http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=306>, or read it online for free.

How to Conserve Your Chemist Cash?

Spend some time and money on ventilation!



The tank cleaners can clean your tanks perfectly in order for your Marine Chemist to classify them as "Safe for Hot Work." However, the tanks may still be classified

"Enter with Restrictions" which means that respiratory protection is required. Therefore, the USCG and many contractors will not enter the tanks until they have been ventilated and re-inspected by the Marine Chemist.

You should spend the money to train your employees how to effectively ventilate the tanks after they are cleaned. Purchase the quality equipment that they need to perform that task.

This is another example of how your SCP (if armed with a PID) can save you money by confirming that your tanks will pass before you call the Marine Chemist.

ASK A CHEMIST!

Looking for clarification? Ever wonder why rules are written the way they are? Ask away! Every month an interesting question will be answered here!

Question

How often do Shipyard Competent Person's need to renew their training?

Answer

There are three major factors that determine frequency for SCP training requirements: OSHA, possible local requirements, and Navy requirements.

1. According to OSHA 1915.7, there is no stated requirement for the frequency of training, only the requirements for the initial training and record keeping. This means that there is **no specified requirement for SCP refresher training.**

2. Possible local requirements: For example, according to the Seattle Fire Department AdRule 26.01.09, Section 5.8.3 Training and Recertification, the initial Shipyard Competent Person Training Course must be a minimum of 24 hours. All Shipyard Competent Persons must complete an 8-hour-minimum SCP Refresher Course at least **every two years .**

3. According to the Navy's Naval Sea Systems Command (NAVSEA) Standard Item No 009-07, Paragraph 3.1.2, initial and **annual update training** is needed for Competent Persons.

Regulations notwithstanding, your company might have a policy that requires refresher training more frequently than the minimum regulations.

PSSA Safety Conference

Monday, October 21, 2013

This free safety training seminar is a joint-venture by the Puget Sound Shipbuilders Association, Federal OSHA and the Seattle Fire Department. It will be held at the City of Seattle's Joint Training Facility.

Topics include: Hand Protection, Ventilation, Global Harmonized System, Combustible Meters, Hearing Conservation, and Fire Extinguishers plus an array of exhibits and demonstrations.

Space is limited. Please contact the Sound Testing office for a copy of the flyer at (206) 932-0206. Or you can RSVP to Al Rainsberger at Foss Maritime (206) 281-3842, e-mail arainsberger@foss.com.

SCP QUIZ

Congrats to **Joe Bouffiou** at Northland Services who won a \$25 Cabela's gift card for last month's quiz!

Last Month's Answers:

1) How often should you check a space to make sure it is staying safe?

A competent person shall visually inspect and test each space certified as "Safe for Workers" or "Safe for Hot Work" as often as necessary to ensure that atmospheric conditions within that space are maintained within the conditions established by the certificate after the certificate has been issued.

2) Name the specific organization that uses the following toxicity terms: PEL TWA TLV

PEL- OSHA

TWA- NIOSH

TLV- ACGIH

3) What is one of the limitations of a half-face respirator?

Any of these limitations could be listed: Air purifying respirators cannot be used for all types of air contaminants and are limited by the type and capacity of the filters/cartridges used. Protection factors offered by these masks are not as good as that provided by a full facepiece air purifying respirator nor do they provide eye protection. Proper fit is essential and many factors may effect the face to face piece seal. They cannot be used in oxygen-deficient atmospheres, or in atmospheres which have high concentrations of contaminants. Breathing may become difficult because of the additional effort required to draw air through the purifying media.

This Month's Questions:

OSHA recognizes two types of mechanical ventilation when welding, cutting or heating.

1) What are these two types of ventilation?

2) Welding galvanized steel in an enclosed space requires this type of mechanical ventilation.

3) What section of OSHA 1915 outlines these requirements?

Submit your answers to newsletter@soundtestinginc.com before October 25, 2013. All correct answers will be entered into a random drawing and one person will win a \$25 gift card! One entry per person, please. The correct answer and the winning entry will be published in next month's issue.

TRAINING

Shipyard Competent Person

Seattle

3-Day Initial • Oct 9-11

1-Day Update • Oct 30

3-Day Initial • Nov 6-8

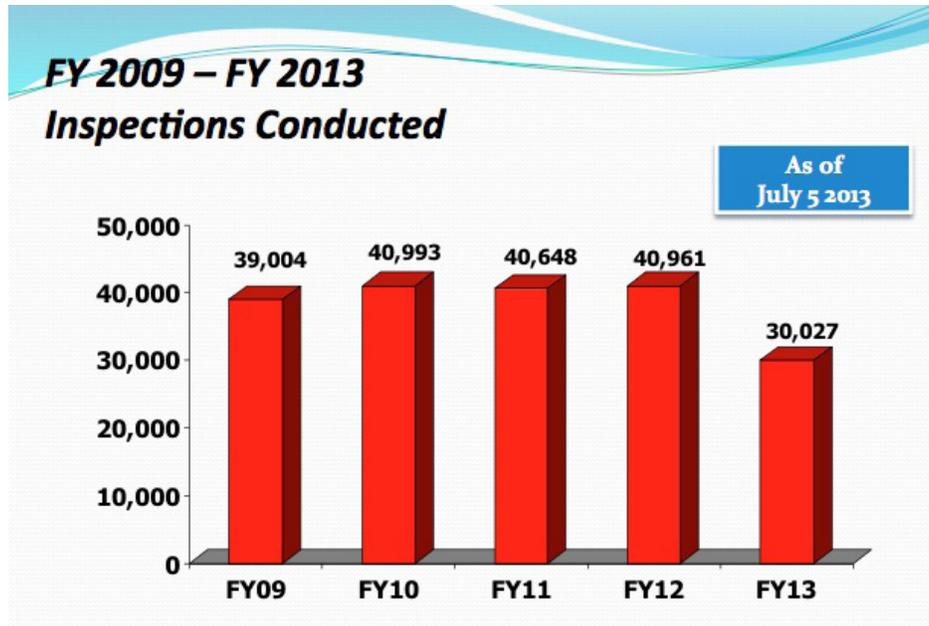
1-Day Update • Nov 20

OSHA 10hr Training October 24th & 25th

This 10 hour training on 29 CFR 1915 provides methods on recognition, avoidance, abatement, and prevention of safety and health hazards in work-places specific to the maritime industry.

Strengthen your workplace safety and health today by calling Sound Testing for more information at 206-932-0206.

OSHA Enforcement Update



This summer, Amy Wangdahl, the Director of the Office of Maritime and Agriculture presented a survey to the Marine Chemist Association on the enforcement efforts made by OSHA so far this year. As of July, there have been over 30,000 inspections conducted this year and about 59,000 violations issued. Of the violations issued, 76% (about 45,000) were categorized as Serious. This means that the employer knew about the existence (or should have known) of the hazard where there is a substantial probability that death or serious physical harm could have resulted. The average current penalty per serious violation is \$2,023; that is down from fiscal year 2012 that averaged \$2,153.

Here's a list of the 10 Most Cited Standards specific to the Maritime industry:

1. Respiratory Protection
2. Hazard Communication
3. Electrical, Wiring Methods
4. Electrical, General Requirements
5. Electrical, Wiring Design & Protection
6. Powered Industrial Trucks
7. First Aid & Lifesaving Facilities
8. Abrasive Wheel Machinery
9. Machine Guarding
10. Cranes & Derricks

Also, keep an eye out for Final Rules changes coming from OSHA:

1. Walking Working Surfaces and Personal Fall Protection (Subpart D and I)

November 2013

2. Vertical Tandem Lifts

April 2014

OLD NEWSLETTERS

Copies of our newsletter from previous months can be found at our website:

<http://www.soundtestinginc.com/resources.php>

Welcome Emily

Emily Wigley joined the office staff on September 6. She works mornings Monday through Thursday and will be doing vacation relief. Please give Emily your usual warm welcome when she answers the phone for you.

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24 HOUR SERVICE

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