

SCP Tribune.®

Looks Like Rust: Burns Like Gasoline



A drydock survey of a fish processor hull found wasted weld seams. So the Project Manager asked the Competent Person to check the forepeak ballast tank “Safe for Hot Work” for the vee/weld repairs to follow.

The SCP looking from the manway saw right away that the tank was rusty, but clean and dry. (Note image to left.)

However, you can't have certainty without a proper tank walk. So the SCP clambered in for a closer look.

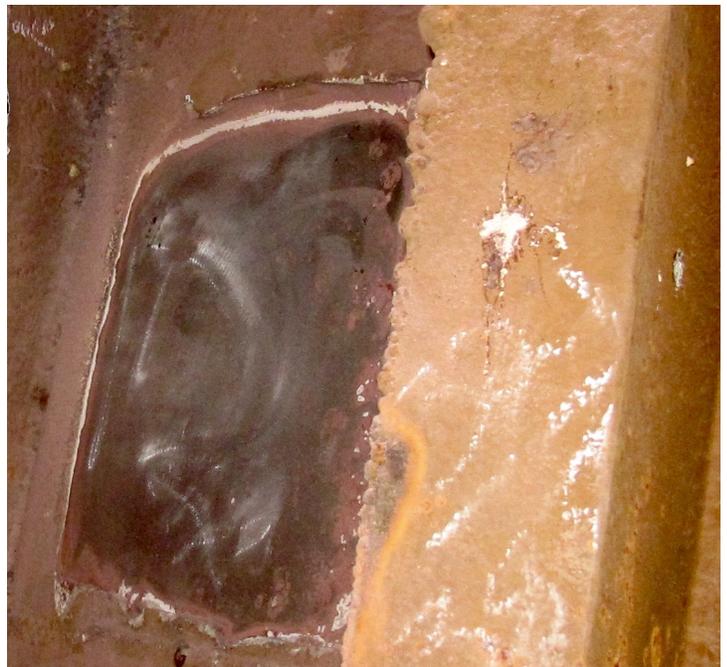
Good thing, too! Noticing light-colored foam on the overhead, the Competent Person became suspicious.

Poking the sideshell with his slag hammer, he quickly found the “rust” was, in fact, a half-inch covering of isocyanate insulating foam, turned reddish-brown by years of ballast water! **Not Safe For Hot Work!** until a Chemist certified the foam had been removed in way of the work. (Note image to the right.)

The curiosity and hard work of that SCP served the shipyard well.

What looks like “rust” may sometimes be styrene, for instance, in a tank barge and would require a Marine Chemist from the start. Why?

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TRAINING Shipyard Competent Person



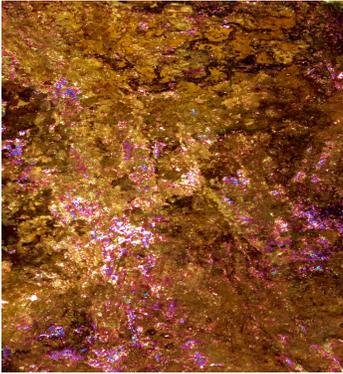
3-Day Initial
Dec 9-11 (Shoreline)
Jan 6-8

1-Day Updates
Dec 16
Jan 7
Jan 20

OSHA 10 Maritime & General Industry

10-hour training on 29 CFR 1915 or 1910 provides methods on recognition, avoidance, abatement, and prevention of safety and health hazards in workplaces specific to the maritime or general industries.

Looks Like Rust, Cont.

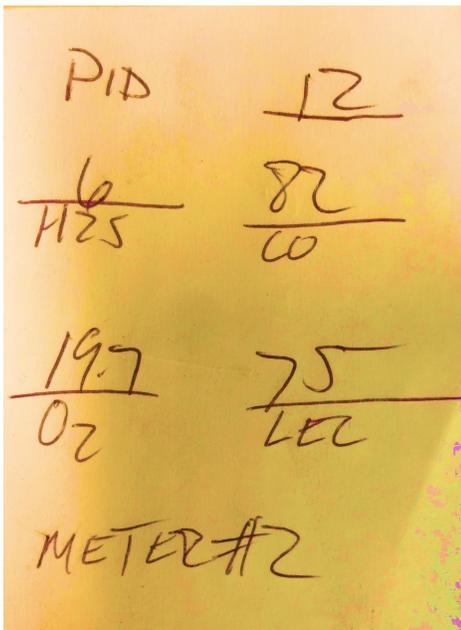


Styrene, the base for fiberglass resin, is a clear liquid. But experienced Chemists know that tons of Polystyrene on the tank walls look exactly like rust! (See photo to left.)

Now, notice how a speck of that “rust” in a gentle flame burns like gasoline! Imagine a barge tank with thousands of pounds of styrene polymer feeding the blaze! Just another reason Tank Vessel hot work can be tricky and often is a challenge, even for the Marine Chemist.



Inspections as Often as Necessary



A yard Competent Person reported that his meter reacted so strangely to hot work (2 burners and a firewatch) in a sewage treatment room that the SCP copied the readings into a notebook.

The oxygen cell (usually reliable) read 19.7, a full percent below the normal 20.9%. H₂S at 8ppm; CO around 80ppm; (much more than the 25ppm allowed.) Strangely, the PID function, usually super sensitive, at 12ppm was not very threatening. Most alarming was the combustible gas reading: 78% of the vapor needed for explosion! (78% of the L.E.L.) Where in the world did THAT come from?

There were several open 3” or 4” plastic sewage pipes draining various parts of the vessel: The treatment room had 3 doors: 1 fwd, 1 aft and one to the side. Immediately the Competent Person did his most constructive duty, which was to usher the workers out of the space. He added a blower to get rid of the alarming vapors, which never came back.

The Competent Person and Chemist came up with several observations.

1. There was SOMETHING there.
2. The gassy reading was possibly from methane. (Though it lights up the combustible gas cell, methane is invisible to the lower-power lamp of the PID, which had failed to indicate any great problem.)
3. It takes about 5% methane to cause a 100% LEL reading. So, 70-80% LEL indicates 4% methane, enough to displace enough air to lower the oxygen 1% to ~20%.
4. Sewage is known to generate methane, CO and H₂S.
5. It seems like the open plastic sewage drain lines are the culprits. And so we are reminded of the OSHA obligation to blank, plug or separate any line, which might “...deliver hazardous material to the worksite.”

(Continued on the next page)

Ask a Chemist

Question: We may ask the Chemist to fill an oily tank with inert gas so we can weld on it without cleaning it. But, is it safe to cut into such a space with a torch?



Answer: Here we have to be careful. “Inerting” an oily space, says the NFPA regulation, requires that you contact the Chemist because inerting is not safe in all situations.

An “inerted” space is “safe for hot work” because the inert gas has replaced the oxygen in the space so its oil cannot burn (or explode!) during hot work.



But cutting with a torch into an inerted space will, when the burner pulls on the oxygen lever, blast more oxygen into the space. This means during cutting the space may stop being “inert” and

become unsafe.

Inspections, Cont.

6. The burners’ fuel was propane. If a torch had been left on, the oxygen level might have gone up as well as the LEL, but it didn’t. Instead, it went down a percent.
7. If a torch leaked propane, a meter calibration-checked with methane would drastically underestimate the propane; the space would have been in reality well over 100% LEL. That is, it would have been explosive.

These “observations” are not “conclusions.” As is often the case with scenarios like this, we just don’t know the exact factors at work.

What IS certain? This SCP took all the right steps. He tested to find the unsafe conditions: He stopped the work immediately: He got the workers out of harm’s way: He took the necessary steps to make the space safe again. He retested with confidence because his test gear was reliable. The Big Lesson: The SCP’s “as often as necessary” testing was vital in keeping the workplace safe.

Great job being organized, involved and watchful throughout the workday!

Congrats to **Jake Lazenby** of **iWorkWise**: Winner of November’s quiz.

November’s Question:

Q: What situation makes a fuel tank so dangerous it must be posted “Not Safe for Workers”, even though it is completely closed up and its vent sealed?

A: Inerted Spaces are IDLH and must be posted.

December’s Question: What is the industry term for the tank access down the structure pictured to the right?

Submit your answers to newsletter@soundtestinginc.com before December 25, 2015. All correct answers will be entered into a random drawing and one person will win a \$25 gift card! One entry per person, please.

