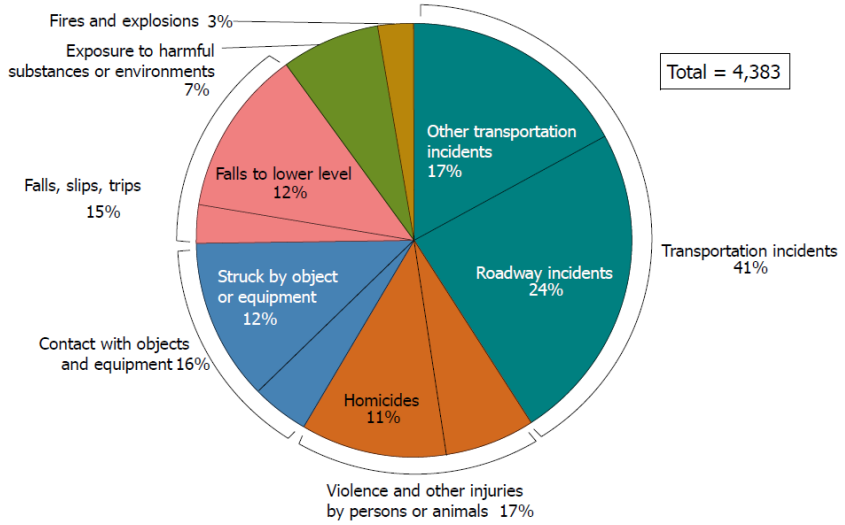
How Proper Respirator Testing Could Save Up To 7% Of Fatalities In Oil & Gas

Different aspects of the industry such as drilling, transportation, storage, and refining all face similar dangers and the flammable nature of oil and natural gas increase the risks in the event of a leak or spill. Workers in the oil and gas industry face a dangerous work environment every day. Injured workers face severe trauma and physical handicap and workers' compensation is one of the few avenues for these workers to seek justice.

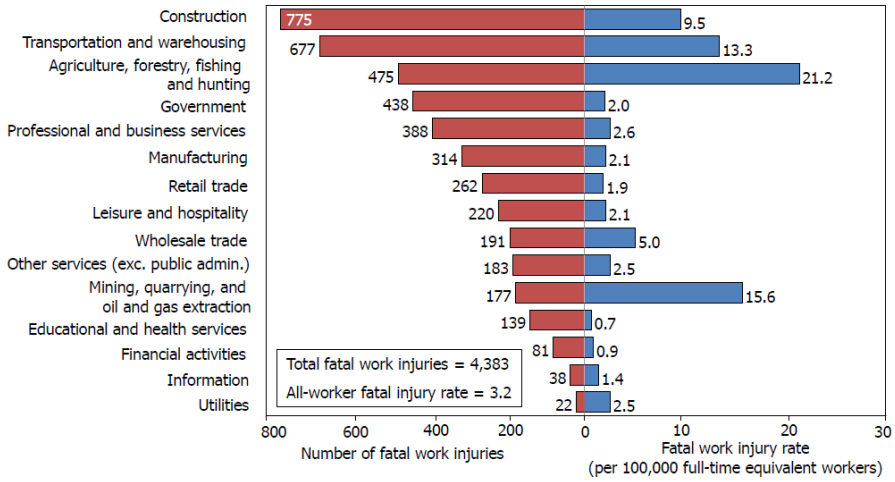
According to the US Dept. of Labor, the charts below show the statistics of event & rate of injuries.
Source : : U.S. Department of Labor, Bureau of Labor Statistics, in cooperation with state and federal agencies, Census of Fatal Occupational Injuries

Chart 1. Fatal occupational injuries, by major event, 2012*



*Data for 2012 are preliminary.
NOTE: Reference year 2011 constitutes a series break from earlier years for event data. For more information, see http://www.bls.gov/iif/osh_notice11.htm.
Percentages may not add to 100 due to rounding.
SOURCE: U.S. Bureau of Labor Statistics, U.S. Department of Labor, 2013.

Chart 2. Number and rate of fatal occupational injuries, by industry sector, 2012*



*Data for 2012 are preliminary.
NOTE: All industries shown are private with the exception of government, which includes fatal injuries to workers employed by governmental organizations regardless of industry. Fatal injury rates exclude workers under the age of 16 years, volunteers, and resident military. The number of fatal work injuries represents total published fatal injuries before the exclusions. For additional information on the fatal work injury rate methodology, please see http://www.bls.gov/iif/oshnotice10.htm.
SOURCE: U.S. Bureau of Labor Statistics, U.S. Department of Labor, 2013.

Even though the data are preliminary, it shows that 7% of fatal injuries are caused by exposure to harmful substances or environments and Oil & Gas industry has one of the highest rates.

Awareness of the type of chemicals exposure is very important, workers can be protected from these exposures by ensuring the right Respiratory Protective Equipment is provided.

Improving Risk Management Program

Respiratory protection is only effective if the correct respirator is used and fit correctly, it will be ineffective if the respirators don't fit properly around the nose and mouth. No single model or size of respirator will fit every worker, but fit testing can be used to ensure every worker is assigned a respirator that fits.



Fit Test

Fit testing the right way means you're improving your risk management program while providing the best possible protection for your workers. Equally important, you're complying with all regulations. The PortaCount® Pro Respirator Fit Tester is more than a piece of equipment. It's peace of mind.







As an Industrial Hygienist Professional:
+ Do you dread being fit tested, or giving fit tests?
+ Do you get subjected to a repulsive "challenge aerosol" during the test (i.e., Saccharin or Bitrex®)?
+ Does the wearing of a test hood trigger your claustrophobia?
+ Are you wishing there was an easier way to maintain compliance records?

If so, the chances are you're respirator fit testing using the Qualitative Fit Testing (QLFT) method. QLFT is a low cost, subjective pass/fail test that exposes the respirator wearer to a chemical stimulant (while donning a test hood) that can only be detected if the respirator leaks. Multiple challenges exist for QLFT, including operator error and fatigue as well as deceitful responses from the person being fi t tested, not to mention the bookkeeping challenges it presents. **PLEASE NOTE—there's a better, trusted, Occupational Safety & Health Administration (OSHA)-accepted way to do respirator fit testing.**

Comparison of Fit Testing Methods: QLFT vs QNFT with the PortaCount Fit Tester
It's easy to see the advantages QNFT can offer.





Good (Qualitative) QLFT	Best (Quantitative) QNFT
Squeeze Bulb	**PortaCount Pro+** integrated, automated, step-by-step software test protocol that enables up to four people to be t tested simultaneously using one computer
75-225 nebulizer squeezes per test subject	1 button push, 99% reduction in work, 100% reliable
What a Waste! + Tedious process + Prone to errors as it depend on a person's chemical sensitivity + Increases need for operational resources + Provokes repetitive stress disorders + Necessitates exposure to unpleasant tasting solutions + Prone to deceitful test responses	**Know You're Protected!** + Speeds up testing + Eliminates Guess work and measure actual fit + Enables real-time t optimization and training + Eases reporting and record keeping + Minimizes operational resources + Eliminates repetitive stress disorders + OSHA-compliant for all respirators

Ensure Maximum Protection: Quantitative Respirator Fit Testing (QNFT)

QNFT method measures an aerosol challenge agent on the outside of the respirator (C_{out}) as well as on the inside of the respirator (C_{in}) as the wearer performs a series of exercises that approximate conditions of use, while the results are recorded. The ratio of the two measurements (C_{out}/C_{in}) is called a fit factor. While a fit factor of 100 may be fine for a half mask, those who rely on a full-face mask to protect them deserve the reliability that only a quantitative fit test from the PortaCount Pro Fit Testers can deliver.

$C_{OUT} \div C_{IN}$ = FIT FACTOR



Occupational Safety & Health Administration (OSHA) and National Fire Protection Association (NFPA) require a protection factor of at least 500 for full-face respirators; American National Standards Institute (ANSI) requires 1000. There is no qualitative method that meets these requirements. You can't afford to settle for minimum requirements when lives are at stake.

Respirator Assessments You Can Trust

Passing a quantitative respirator fit test proves that the respirator is sized correctly and that the person knows how to put it on correctly to achieve the optimal fit. The PortaCount Fit Tester was first introduced by TSI more than 20 years ago, meets **OSHA**, **NFPA**, and **ANSI** respiratory protection standards. Today, only the PortaCount Fit Tester can:



+ Enable real-time fit optimization
+ Facilitate training on proper donning procedures
+ Speed up testing time using real-time fi t factor technology
+ Eliminate errors with automated step-by-step guidance
+ Ease record keeping and management of reports
+ Go above and beyond regulatory compliance
+ Test all types of respirators

Conclusion

Existing QLFT protocols are technically unsuitable for the fit testing of respirators where a fit factor greater than 100 is required. **OSHA's Respiratory Protection Standard 29CFR1910.134** released on January 8, 1998 recognizes this fact. The new standard replaces the various fit testing provisions contained in the many substance-specific regulations so that respirator fit testing will now be done the same way by all employers.

Understanding how important respirators can be in keeping you safe while on the job. This protection is most likely a full mask respirator, available in numerous types, models and sizes. The only way to ensure you're wearing the right one, and fully protected, is to be properly fit tested. This doesn't have to be an unbearable, tedious process—no matter if you're the one being fit tested or if you're facilitating the fit test.

This is where the PortaCount Fit Tester can help, as the best OSHA-accepted fit test method. It doesn't get any easier and more efficient. The PortaCount uses intuitive software driven protocol to conduct and drive adherence to respirator fi testing best practices while multi-person testing capabilities instill efficiency. In addition, the software easily maintains accurate compliance records and facilitates printing of fit test certificate cards that individuals can carry for quick reference in times of need. It's virtually impossible to make mistakes and eliminates negative tendencies that plague QLFT.

For more information, please visit our web site http://www.tsi.com/Portacount-Respirator-Fit-Tester-8030/ or email us AP_Marketing@tsi.com or call us @ +65 65956388