



Technical Bulletin

Lokring™ & Welding: Gas & Fume Safety

“An estimated 526,000 employees are at risk for exposure to chemical and physical hazards of welding, cutting and brazing.”

-US Occupational Safety & Health Administration Welding Health Hazard Statistics
www.osha.gov

According to the OSHA Construction Safety and Health Program, hot work on pipes using welding rods can result in exposure to:

- **Zinc** or **zinc oxide**, which can cause metal fume fever
- **Cadmium**, which can lead to severe lung irritation, kidney damage & in some cases, death
- **Beryllium**, which can result in pneumonia, chronic cough & fatigue
- **Iron Oxide**, which may lead to irritation of nasal passages, throat & lungs
- **Mercury**, which can produce stomach pain, kidney damage, respiratory failure, tremors & hearing damage
- **Lead** or **lead oxide**, which can cause lead poisoning
- **Fluorides**, which may result in eye, nose, skin, throat & lung irritation, & bone damage
- **Phosgene**, which can react with moisture in the lungs to produce hydrogen chloride & in effect, destroy lung tissue
- **Carbon Monoxide**, which can lead to nausea & in some cases, death
- **Ozone**, which may lead to headaches, chest pains & fluid in lungs
- **Nickel**, which can cause asthma &, with chromium, cancer
- **Chromium**, which may produce sinus problems &, with nickel, cancer
- **Manganese**, which can lead to Parkinson's disease

Source: <http://www.osha.gov/doc/outreachtraining/htmlfiles/weldhlth.html>

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Lokring Tech Bulletin Welding Series - Fumes (11-07-07).doc

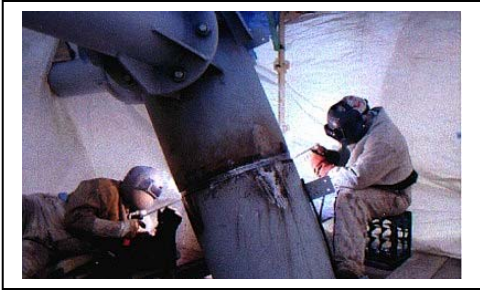


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OSHA Fines for Not Following Welding Safety Standards:

- "The alleged failure of three Hugo, Okla., companies to train employees and give them adequate gear for working inside confined spaces with unsafe air has resulted in proposed penalties totaling \$427,500 from the U.S. Department of Labor's Occupational Safety and Health Administration...OSHA's Oklahoma City office began its investigation...on Dec. 10 following complaints it received that employees were entering and performing work inside railcars without adequate respiratory equipment. Several employees have suffered long-term illnesses due to the exposure."
- "Hugo Employers Fined \$427,500 for 'Confined Space' Violations; Several Workers Injured," OSHA Press Release, June 16, 2003
- "CORPUS CHRISTI, Texas – Services Ltd has agreed to pay \$294,000 in penalties for citations issued by the [OSHA] for the company's failure to implement standards that protect workers against welding hazards while working in a confined space. Two workers...were killed in a January accident at the company's Ingleside facility...They were killed when accumulated fuel gas ignited in the confined space where they were working."
- "Texas Welding Company Agrees to Pay OSHA Fine for Failing to Implement Confined Space Standards," OSHA Region 6 Press Release, July 3, 2003
- The OSHA "has cited Southern Scrap Recycling Gulfcoast and E & K Enterprises, Inc. for safety violations at a Gulfport, Miss., scrap yard. The citations carry penalties totaling \$22,350." Citations "addressed numerous welding violations, including fail to guard against mixing of fuel gases and oxygen."
- "Gulfport Explosion Leads to Penalties Totaling \$22,350 for Safety Violations," OSHA Region Four News Release, December 6, 1999



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Lawsuits Regarding Welding and Parkinson's Disease:

Welder Jim Sartain "has been awarded workers' compensation for Parkinson's disease tied to working with manganese. This is the first time such a tie has been acknowledged in California...The decision in May 1996 by the California Workers' Compensation Appeals Board ended a 9-year legal battle...The Commission ordered \$83,000 in back benefits, a life pension, and medical care for life."

-"Workers' Compensation is Awarded to Welder Who Has Parkinson's Disease," taken from "Impact on Construction Safety and Health," Vol. XV, No. 2, September 1997, a joint publication of the Building & Construction Trades Department and the Center to Protect Workers' Rights www.cdc.gov/elcosh/docs/d0100/d000121/d000121.html

"BOC shares plummeted yesterday after it emerged that a US jury had awarded damages against it and [Hobart Brothers and Lincoln Electric] in a case that linked the use of welding rods...to Parkinson's disease. The case potentially opens the floodgate to massive class action lawsuits in the US, a liability estimated by some analysts at up to \$70bn for the welding rod industry as a whole." The trial was held in Madison County, Illinois and Plaintiff Larry Elam was awarded \$1 million.

-"BOC Faces Flood of Damages Over Parkinson's," *The Independent*, October 30, 2003, Saeed Shah news.independent.co.uk/business/news/story.jsp?story=458625

"A federal panel has ordered more than 100 federal lawsuits from across the country consolidated in Cleveland before U.S. District Judge Kate O'Malley to simplify legal issues, and attorneys expect more to be added...There are more than 500,000 welders nationwide; about 1 percent are involved in the federal lawsuits before O'Malley."

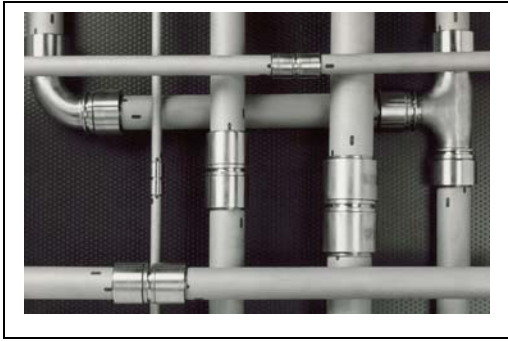
-"Suits Suggest Welding is Linked to Parkinson's: Cleveland Becomes Focal Point of Cases," *The Cleveland Plain Dealer*, 11/29/03, John Caniglia

Ongoing Welding & Parkinson's Disease Class Action Lawsuit Websites:

www.bigclassaction.com/class_action/welding.html

www.classactionlawsuit.org/weldingfumeslawyer.html

www.weldingandparkinsonsdisease.com



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“NIOSH has reported that excesses in morbidity and mortality among welders appear to exist even when exposures have been reported to be below current OSHA Permissible Exposure Limits (PELs) for the many different components of welding emissions.”

-OSHA Welding Health Hazard Statistic-

Lokring Incident Reduction Plan (IRP):

Lokring fittings use a patented, elastic strain pre-load (ESP®) technology to connect small diameter piping without threading, welding or brazing. Lokring fittings are designed to be used for field fabrication, for rapid repair, for installation in tight access areas and for tie-ins of shop fabricated piping. Installation is safe, simple, fast and cost effective, and the connections are secure, sturdy and reliable. Many accidents, injuries, health issues, lawsuits and fines could be avoided, if Lokring connections were used.

Lokring Set-Up & Installment Requires *No Hot Work* Thus Eliminating:

- Potential risk of fires
- Installer susceptibility to gas and/or fume inhalation, which otherwise could result into health problems, lawsuits & fines
- Numerous hot work safety requirements in the Material Safety Data Sheet (MSDS) that are both costly and time consuming
- Confined space ventilation worries



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Additional Articles & Statistics of Interest:

American Academy of Neurology: "Welding-related Parkinsonism"
<http://www.neurology.org/cgi/content/full/56/1/8>

Belleville News-Democrat: "Welders Seem Unworried About Parkinson's"
www.icjl.org/news_weldersnotworried.html

eLCOSH: "Fume Hazards Can Menace Outdoor Workers, Too"
www.cdc.gov/elcosh/docs/d0300/d000371/d000371.html

Forbes.com: "BOC Says Not to Make Provision in US disputes"
<http://www.forbes.com/work/newswire/2003/11/13/rtr1146301.html>

Houston Chronicle: "Too High a Price: Barrows"
www.cdc.gov/elcosh/docs/d0100/d000187/d000187.html

International Brotherhood of Electrical Workers: "Welding and Manganese Poisoning"
<http://www.ibew.org/stories/03journal/030708/p8.htm>

National Library of Medicine: "Parkinsonism Due to Manganism in a Welder"
<http://tinyurl.com/txp0>

NIOSH: "Criteria for a Recommended Standard: Welding, Brazing and Thermal Cutting"
www.cdc.gov/niosh/88-110.html

OSHA: "Welding, Cutting and Brazing"
<http://www.osha.gov/SLTC/weldingcuttingbrazing/index.html>