

# **OSHA: Regulations for Safety and Health for Employees in the Chemical Industry**

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## **Abstract**

The chemical industry uses humans to operate machinery to process more or less hazardous chemicals. Given that, in the USA, the federal Occupational Safety Health Administration (OSHA) was established to protect safety and health of workers in the chemical (and other) industries. To date, OSHA has enforced several regulations, such as Process Safety Management (PSM), Permissible Exposure Limits (PELs) and Personal Protective Equipment (PPE); these regulations apply directly to the chemical industry. Moreover, OSHA has cooperative programs, for instance the Alliance Program, where OSHA works with companies, including businesses, trade or professional organizations, to improve resources and expertise to inform employers and employees of safety and health issues. This essay provides an introducing description of the above-listed features of OSHA.

## **History and Impact**

In 1970, the Occupational Safety and Health Act (OSH Act) created the Occupational Safety and Health Administration (OSHA) within the US Department of Labor to reduce accidents, illnesses and deaths among employers and employees ([All About OSHA brochure, 2006](#)). OSHA's official website is: [www.osha.gov](http://www.osha.gov).

Since its foundation, OSHA has contributed to a decrease in more than 60 % of workplace fatalities and to a decline of about 40 % of occupational injury and illness rates. Simultaneously, US employment has more than doubled, reaching a mark of 115 million workers at 7.2 million worksites. Workplace injury, illness and fatality statistics are provided by the Bureau of Labor Statistics within the US Department of Labor. These data can be accessed through OSHA's website <http://www.osha.gov/oshstats/work.html>.

Moreover, from 2003 to 2004, OSHA and its partners in the public and private sectors have: reduced the number of workplace injuries and illnesses by 4 % and made the lost workday case rates drop by 5.8 %; virtually eliminated brown lung disease in the textile industry; in 2005, conducted around 39,000 inspections and issued over 85,000 citations for violations.

### **Employers/Employees Rights and Responsibilities**

Employees are encouraged actively to engage in efforts to promote safety and health in the workplace. Some of their rights, under the OSH Act, are:

- Review copies of appropriate standards, rules and regulations that the employer is required to have available at the workplace;
- Request information from the employer on safety and health hazards in the workplace, appropriate precautions, and procedures to follow if the employee is involved in an accident or is exposed to toxic substances;
- Gain access to relevant employee exposure and medical records;
- Request an OSHA inspection if they believe hazardous conditions or violations of standards exist in the workplace;

- Accompany an OSHA compliance officer during the inspection tour, or have an authorized employee representative do so.

Workers also have the right to obtain information that must be provided by employers concerning OSHA safety and health standards that apply to their workplace; to access records and test results; employers must inform employees concerning the existence; location and availability of their medical and exposure records at least annually. To promote workplace safety, employers and employees are encouraged to work together to reduce hazards; to protection from retaliation, that is, employees who make a complaint to OSHA about safety and health hazards in the workplace have the right of confidentiality.

Employees have responsibilities as well, such as to read the OSHA poster at the jobsite, comply with all applicable OSHA standards, report hazardous conditions to the supervisor. A complete list of workers rights and responsibilities is available in the [Employee Workplace Rights brochure \(2003\)](#).

Employers have the responsibility to provide a safe and healthful workplace for their employees. It is OSHA's task to ensure that safe conditions are achieved by enforcing standards; providing training, outreach and education; establishing partnerships and encouraging constant improvement in workplace safety and health. The workplace is inspected by an OSHA Compliance Safety and Health Officer (CSHO) in accord with the OSH Act. If any violations are encountered, the employer will be issued a Citation and Notification of Penalty, reporting the exact nature of the violation(s) and any associated penalties.

OSHA classifies six kinds of violations shown in Table 1.

<b>Table 1: Types of employers violations</b>		
<b>Type</b>	<b>Description</b>	<b>Penalties</b>
<i><b>Willful</b></i>	The employer knew that a hazardous condition existed but made no reasonable effort to eliminate it.	\$ 5,000 - \$ 70,000 for each violation
<i><b>Serious</b></i>	When the workplace hazard could cause injury or illness that would most likely result in death or serious physical harm, unless the employer did not know or could not have known the violation.	Up to \$ 7,000 for each violation
<i><b>Other-than-Serious</b></i>	When a serious injury or illness likely to result from a hazardous condition cannot reasonably be predicted to cause death or serious physical harm to exposed employees, but does have a direct and immediate relation to their safety and health.	Up to \$ 7,000
<i><b>De Minimis</b></i>	Violations that have no direct or immediate relationship to safety or health and do not result in citations or penalties.	N/A
<i><b>Failure to Abate</b></i>	When the employer has not corrected a violation for which OSHA has issued a citation and the abatement date has passed or is covered under a settlement agreement and when the employer has not complied with interim measures for a long-term abatement within the time given.	Up to \$ 7,000 per day for each violation
<i><b>Repeated</b></i>	When the employer has been cited previously for a substantially similar condition and the citation has become a final order of the Occupational Safety and Health Review Commission.	Up to \$ 70,000 for each violation

The employer can either agree or disagree with the Citation and Notification of Penalty. In the first case he/she must correct the violation and pay the penalty if it applies, whereas in the second case the employer has 15 working days from the date he/she received the citation to contest the citation in writing, the proposed penalty and/or the abatement date. More information on employers' rights and responsibilities is available in [Employer Rights and Responsibilities Following an OSHA Inspection brochure \(2005\)](#).

## Regulations and Cooperative Programs

All industries, including the chemical industry, fall into the category of “General Industry”. The three exceptions are the agriculture, construction and maritime industries. Hence, the chemical industry is regulated by OSHA’s general industry standards, directives and standard interpretations.

Chemical industries may deal with toxic, reactive or flammable liquids and gases that threaten safety and health in a workplace in an event of an accident. Because these dangerous materials may cause an accident, OSHA has issued the Process Safety Management (PSM), that presents specific standards for both general and construction industries. These standards emphasize the management of hazards related to highly dangerous chemicals and establish a comprehensive management program that integrates technologies, procedures and management practices. The standard that concerns the general industry is labeled 29 CFR 1910, in which Subpart H is devoted to hazardous materials. Standard number 1910.119, within Subpart H, concerns PSM of highly hazardous chemicals. More detailed information is available online at <http://www.osha.gov/SLTC/processsafetymanagement/index.html>.

Blair (2007) points out that the standard cited above introduces a new term to the technical vocabulary: RAGAGEP, which stands for Recognized and Generally Accepted Good Engineering Practices. The PSM standard states that employers whose workplaces fall into the general industry category are required to document that the equipments comply with RAGAGEP. Blair also emphasizes that no OSHA rule particularly attributes responsibility for RAGAGEP compliance; to enforce RAGAGEP, OSHA must establish that the employer can be expected to be conscious of the hazard.

In addition to the PSM regulation, other regulations concern chemicals. These include:

- ***Permissible Exposure Limits (PELs)***: to protect workers against effects of exposure to hazardous chemicals. PELs provide regulatory limits on the amount/concentration of a substance in air. The OSHA standards that apply are 29 CFR 1910 Subpart Z: Toxic and hazardous substances. OSHA's website section: <http://www.osha.gov/SLTC/pel/index.html>.
- ***Personal Protective Equipment (PPE)***: is required to reduce employee exposure to hazards to acceptable levels. Employers are responsible to determine if PPE should be used by their employees. OSHA standards that apply are 29 CFR 1910 Subpart G: Occupational health and environment control. OSHA's website section: <http://www.osha.gov/SLTC/personalprotectiveequipment/index.html>.

OSHA also offers opportunities for businesses and organizations to work cooperatively with the agency. One of the cooperative programs is the Alliance Program which enables trade or professional organizations, employers, labor organizations and educational institutions that share an interest in workplace safety and health to collaborate with OSHA to prevent injuries and illnesses in the workplace. Currently, the Alliance Program includes the American Chemistry Council, the Dow Chemical Company, the Society for Chemical Hazard Communication and the Society of the Plastics Industry, Inc.. Organizations that are members of the program receive assistance to build trusting, cooperative relationships with the agency; to stimulate networking with others committed to work-

place safety and health; to leverage resources to maximize worker safety and health protection and to gain recognition as proactive leaders in safety and health.

## **Conclusions**

Workers in the chemical industry, employers or as employees, must be concerned with safety and health issues. Employers and employees have rights and responsibilities that are enforced by OSHA (in the US). OSHA's role is to ensure that employees and employers are working in accord with safety standards to decrease injuries, illnesses and deaths in the workplace.

Since its creation in 1970, OSHA has issued specific standards that apply to different categories of work. In the chemical industry, some regulations concern management of hazardous substances, regulatory limits of exposure to potentially harmful chemicals and the use of protective equipment to reduce exposure to dangerous materials.

Commercial, social and educational organizations are encouraged to work together with OSHA in cooperative programs to exchange experiences with others committed to workplace safety and health, enhance resources for the workplace safety and to gain recognition as promoters of ethics in the workplace.

## **References**

- All About OSHA brochure. 2006. Available at: [http://www.osha.gov/Publications/all\\_about\\_OSHA.pdf](http://www.osha.gov/Publications/all_about_OSHA.pdf).
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