

# Compliance Headliner

## Are incandescent bulbs safe to use around combustible and flammable liquids?

**I**ncandescent bulbs are commonly used in personal work lamps to provide lighting for maintenance of equipment located in unique areas. Although conveniently available in most hardware stores, this type of work lamp is not appropriate for many jobs. Areas that may require such specialized lighting include automobiles, attics, storage rooms, basements, sheds, electrical supply rooms, etc. Oftentimes, these areas contain hazardous materials, to include flammables, combustibles and oxidizers, thus exposing the worker to a potentially dangerous combination.

Flammable liquids are common in many work areas and are probably the most obvious to identify. For example, paints, solvents, fuels, aerosols and lacquer thinner are considered flammable and/or combustible liquids. Flammable liquids are defined as having a flashpoint of less than 140° F. Although the *flashpoint* is not the only relevant characteristic when

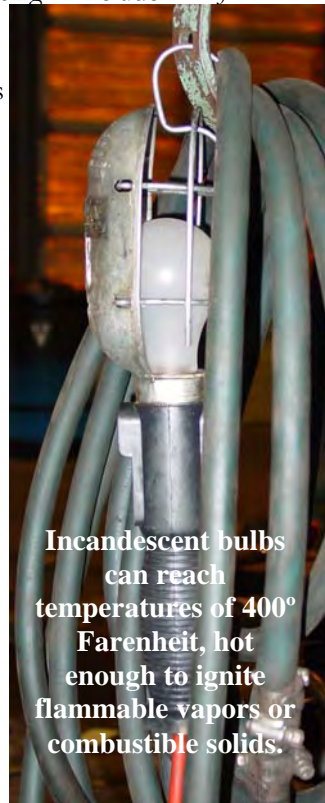
considering fire safety, it is one of the most commonly recognized and is defined as the lowest temperature where ignitable vapors are present. Other characteristics are also important, including the *vapor density* (most flammable liquid vapors weigh 3-4 times more than air) and the *flammable range*. The flammable range is the

amount of flammable vapors present in a given space in relation to the ambient air. Those liquids that have a wide flammable range are more easily ignited and are generally harder to extinguish once lit.

Combustible solids, such as “drop cloths”, work rags, clothing, cardboard, paper and plastic containers are also potentially dangerous when exposed to heat sources, such as hot bulbs or metal.

Although not as common in everyday conversation, oxidizers are found in almost every workplace and home. This chemical group gets its name by emitting oxygen gases that accelerate the burning of combustible material. Included in the oxidizer family are many disinfectants, industrial floor / equipment cleaners, household bleach and pool chlorine. The danger of these chemicals is that oxygen-enriched air can cause ordinary com-

combustibles, such as clothing, rags and plastic to burn rapidly and cause flammable vapors to react violently and/or explode. Think about it, this is the principle behind an oxygen-acetylene torch. Only in an open space, the combination of an open incandescent bulb, flammable vapors, combustible solids and *Continue reading on pg 3...*



**Incandescent bulbs can reach temperatures of 400° Fahrenheit, hot enough to ignite flammable vapors or combustible solids.**

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## Common problems noted by Crandall inspectors remain historically similar...

### 1. Electrical Deficiencies

Electrical cords that are missing the ground prong are commonly noted by our inspectors. This third prong is sometimes removed because of the configuration of an outlet, without regard to the serious safety implications. As seen above, many insulation jackets also are damaged, exposing live internal wires that can electrocute the user. Industrial applications can cause rapid deterioration of power cords, due to heavy use, exposure to corrosive vapors and solvents, etc.....All cords must be periodically inspected and replaced as necessary.

Another common electrical hazard are non-functioning ground-fault circuit interrupters (GFCI). These devices must be installed on equipment and/or outlets used in areas where water may be present. Oftentimes, we will discover this safety mechanism is not working properly due to the use of non-grounded power cords or the connection of multiple extension cords. And all too often, we find electrical equipment used outdoors or near water plugged into a non-GFCI protected outlet.



### 2. Improper Wastewater Disposal

Wastewater from commercial/industrial operations must be evaluated to determine the appropriate discharge method. Many of our automotive sector customers have floor drains in their service and body repair departments. Depending on the year of construction and location of the facility, the discharge design varies. Many of these drains discharge into an on-site oil/water separator prior to entry to the sanitary sewer system or septic tank. However, regular inspection and cleaning of the separator is not always conducted. This can become a serious concern, particularly because older units may crack and allow oil to escape into the surrounding soil. If years pass before this condition is found, the contamination may be severe and cost the owner of the property thousands of dollars in repair and remedial costs.



Unfortunately, the necessity of maintenance may not become evident until the owner attempts to sell the property. Land acquisitions of commercial property usually require the completion of an environmental site assessment (i.e., Phase I). If an environmental condition is noted in an assessment report, the owner will be held responsible and most likely have to absorb the financial consequences.

### 3. Hazardous Waste Management

Several automotive body repair facilities in SC have received inspections from the Department of Health and Environmental Control (DHEC) recently, in regards to hazardous waste generation and storage requirements. The regulations state that satellite accumulation storage containers (those in the process of being filled) must be closed, except when adding or removing liquid. Many shops keep funnels in the drum opening for the convenience of adding waste throughout the work day. Although these funnels have lids, oftentimes they are unable to be closed due to the build-up of paint residue. It is also common to find open buckets of waste, intended for temporary storage. *(Continued on page 4)*



**Funnels equipped with a fusible link that remain open during storage do not meet the requirements of a leak-proof closure device**  
*(see right picture below).*

## Are incandescent bulbs safe to use around combustible and flammable liquids? *(continued from page 1)*

oxidizers can be a spicy recipe! Incandescent bulbs generally reach about 400-450° Fahrenheit and bulbs that are not securely tightened may overheat. In any event, uncovered bulbs can ignite exposed material or flammable vapors. Furthermore, an unprotected bulb also has the potential to break, causing sparks and flying glass. To complicate matters, oxidizers located near a heat source may “feed the fire”, providing a hotter fire that is more difficult to extinguish.

In an effort to minimize hazards associated with this type of situation, it is recommended that incandescent bulbs not be used in personal hand lamps. To supplement low-level background lighting with high-intensity task lighting when needed, <http://www.naturallygreen.cleannorth.org/energytips.htm> states that heavily-used incandescent lights be replaced with compact fluorescent bulbs. Fluorescent bulbs are considerably safer because they do not emit as much heat. They may cost more to buy than incandescents, but only use about one-third as much electricity as a regular incandescent and last ten times longer.

As reported on [www.newdream.org/procure/activities.html](http://www.newdream.org/procure/activities.html), the Laurens County School District in South Carolina completed a lighting retrofit on 3,339 fixtures in seven schools by installing more efficient fluorescent lighting and the use of reflectors. Their new lighting fixtures now have half the number of lamps and ballasts than before while actually improving illumination. From the retrofit, the school district reduced its energy use for lighting by 50% and prevented the emission of 145 metric tons of carbon-containing greenhouse gases and 15,000 pounds of sulfur dioxide each year.

Unfortunately, fluorescent bulbs containing mercury are prohibited from being disposed of in the regular garbage. However, mercury-free bulbs are available and are recommended for commercial use...a green band around the end of the bulb indicates that it is “environmentally-friendly” and safe for general landfill disposal. For more information, visit these websites:

<http://www.abc27.com>, [www.newdream.org/procure/activities.html](http://www.newdream.org/procure/activities.html), & <http://www.naturallygreen.cleannorth.org/energytips.htm>; or contact your Crandall Compliance Program manager at **800-248-4801**.



## OSHA Recordkeeping Revisions Affect Many Companies

*Don't forget to post your OSHA 300.A Injury/Illness Summary from February 1- April 30*

OSHA's revision to their injury and illness recordkeeping rule, effective January 1, 2002, affected many businesses who were previously exempt from such requirements. Still exempt from these requirements are New and Used Car Dealers (SIC 551), Used Car Dealers (SIC 552), Gasoline Service Stations (SIC 554) and most other retail and service related industries. However, all employers, including those exempted by reason of company size or industry classification, must report to OSHA any workplace incident that results in a fatality or the hospitalization of three or more employees ([osha.gov/recordkeeping](http://osha.gov/recordkeeping)).

For those non-exempt industries who employ more than 10 workers, OSHA requires that work-related injuries and illnesses be recorded on the new “300 series” forms. The First Report (form 301; previously form 101) and Log (form 300; previously form 200) must be completed throughout the year, as each incident occurs. At the year's end, the *(continued on page 4)*

## Common problems noted by Crandall inspectors remain historically similar... (continued from page 2)

DHEC requires storage containers to be completely leak-proof (in the event a container is overturned) and have suggested a valve-closable funnel, as shown to the right. Other funnel options and safety features include a self-closing check valve, a hinged cover with fusible link and a flame arrestor. Flame arrestors are intended to protect the drum contents from exterior ignition sources.

Other deficiencies that Crandall notes during inspections are unlabeled hazardous waste drums. Satellite drums must be labeled as to their contents. Once a

must be moved to the labeled *Hazardous Waste*



satellite drum is filled, it permanent storage area, and marked with the initial accumulation date. Small quantity generators can store hazardous waste for 180 days; and large quantity generators can store waste for 90 days.



**This funnel has a threaded discharge tube and a valve closure device.**

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## OSHA Recordkeeping Revisions Affect Many New Businesses

(Continued from page 3)

information must then be transferred to the OSHA 300A Summary form and posted during the months of February, March and April in a conspicuous location. The 300A Summary is a new addition to the recordkeeping package, with no previous comparable form. It is completed by summing the columns from the 300 Log and is intended to make calculating the incident rate easier.

In order to provide an accurate incident rate, it's important for the person who completes the forms to understand OSHA's "system", in that it can be extremely complex. For example, the number of **lost workdays** was previously calculated by the number of *work* days missed by the employee. But, there was no cap on the number of recordable days per incident. The new standard calls for a count of *calendar* days the employee is away from work and sets a cap at 180 days. Even the definition of a **work-related incident** can be tricky to decipher. It is described as any injury or illness caused by a workplace exposure, including the loss of hearing ability (threshold shift of 10 for SC; 15 for Federal) and aggravation of a pre-existing condition. However, OSHA attempts to narrow the latter inclusion down with the addition of the word "significant" in its new definition: a *significant* aggravation of a pre-existing condition caused by a workplace event or exposure. The definition of a recordable injury also changed. Essentially, it now includes any incident that requires medical treatment beyond first aid, results in unconsciousness, causes an employee to miss a workday or causes a worker to be transferred to light duty.

Illnesses are now categorized by their general condition, either a skin disorder, respiratory condition, poisoning or other. However, other regulatory changes require that needlestick injuries be included on the 300A and a separate form, as referenced in the Bloodborne Pathogens Standard 1910.1030. Needlestick injuries and related bloodborne illnesses are considered confidential and the affected employee's name should not be disclosed. To download a copy of the new forms in Adobe Acrobat or Excel format, go to <http://www.osha.gov/recordkeeping/RKforms.html> or contact Crandall at **800-248-4801**.

\* The **Compliance Headliner** is written, edited and designed by Crandall Corporation. References used for developing the articles include a variety of private and public resources, including Crandall personnel knowledge and relevant experience.