



Skin Protection at Work

Skin exposure to chemicals in the workplace is a significant problem in the US. It is estimated that more than 13 million workers are potentially exposed to chemicals that can be absorbed through the skin. Most chemicals are readily absorbed through the skin causing both acute and chronic health effects. Many studies indicate that absorption of chemicals through the skin may occur without being noticed by the worker. This is particularly true for non-volatile chemicals which are relatively toxic and which remain on work surfaces for long periods of time.



Skin exposure to hazardous agents can result in a variety of occupational diseases and disorders, including occupational skin disease. Occupational skin disease is the second most common type of occupational disease and can occur in several different forms including irritant contact dermatitis, allergic contact dermatitis and skin cancers. Contact dermatitis is one of the most common types of occupational illness, with estimated annual costs exceeding \$1 billion. Occupations at risk of potentially harmful exposures of the skin include, but are not limited to, those working in the following industries; Food service, Health care, Agriculture, Cleaning, Painting, Mechanics and Printing/lithography.

Causes of occupational skin disease include chemical agents, physical agents, biological agents and mechanical damage. Chemical agents are the main cause of occupational skin diseases and disorders. These agents are divided into two types, primary irritants and sensitizers. Primary or direct irritants act directly on the skin through chemical reactions. Sensitizers may not cause immediate skin reactions, but repeated exposure can result in allergic reactions. A worker's skin may be exposed to hazardous chemicals through direct contact with contaminated surfaces, deposition of aerosols, immersions, or by splashes.

Other hazards that contribute to occupational skin disease include repeated exposure to extreme temperatures either hot or cold and UV/solar radiation. Skin damage from mechanical trauma by friction, pressure, abrasions, lacerations and contusions (scrapes, cuts and bruises) and exposure to biological agents including parasites, microorganisms, plants and other animal material also increases risk of developing occupational skin disease.



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Occupational skin disease can be prevented. Workers must read product warning labels and Safety Data Sheets to know the recommended personal protective equipment to wear. Personal protective equipment such as gloves, safety eyewear, shop coats or coveralls, and boots should be provided and worn by workers involved in the following activities:

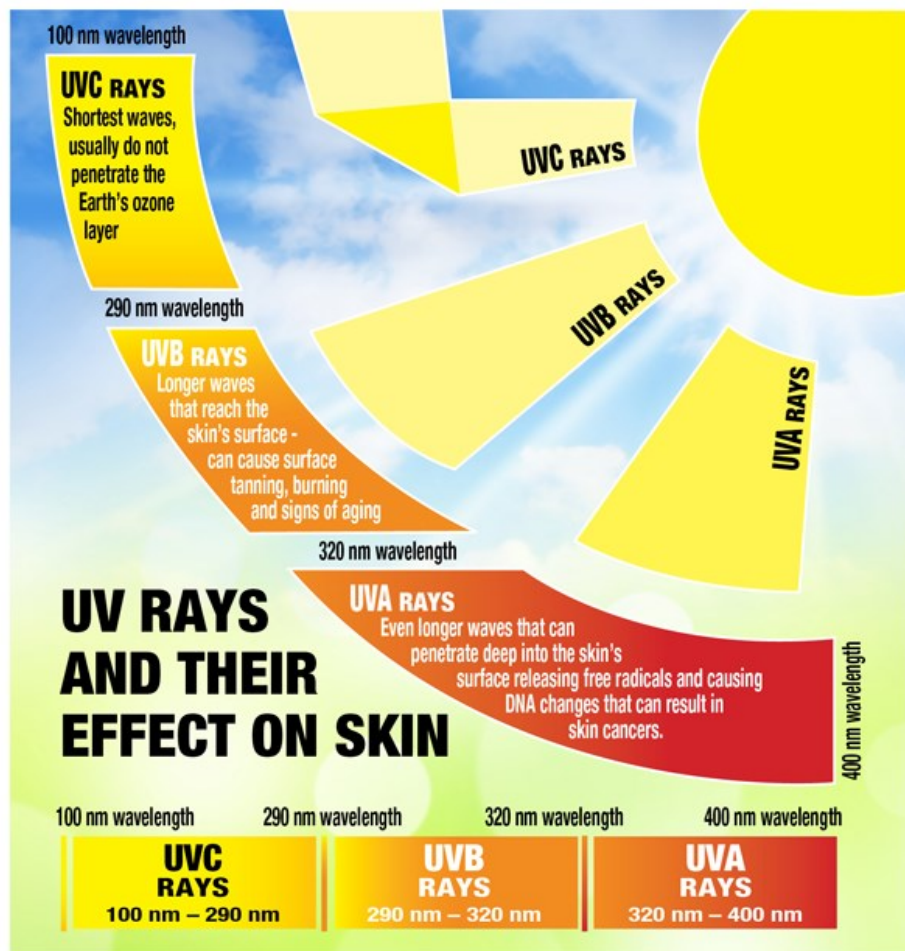
- Wet or dry cleaning of work tools, equipment and work areas where hazardous chemicals are used
- Disinfection of work tools, equipment, and work areas
- Direct contact with solvents
- Contact with monomers of epoxy resins and tacky surfaces or hardening agents (such as glue or epoxy resins)
- Use of preparations containing soaps, detergents,

and disinfectants.

In addition, work uniforms and clothing should be regularly laundered and showers and hand washing facilities must be available at work to wash hands, face and exposed areas of skin to any chemical product or process.

Outdoor workers, especially in sunny, warmer climates, are exposed to dangerous amounts of solar radiation. Solar radiation or sunlight contains ultraviolet (UV) radiation, which causes premature aging of the skin, wrinkles, eye cataracts, and skin cancer. Each year in the U.S. over 5.4 million cases of non melanoma skin cancer are treated in more than 3.3 million people. The amount of damage from UV exposure depends on the strength of the light, the length of exposure, and whether the skin is protected. There are no safe UV rays or safe suntans.

Sun exposure at any age can cause skin cancer, especially with repeated, regular exposures to those most susceptible. Workers who burn easily, spend a lot of time outdoors, or have any of the following physical features; numerous, irregular, or large moles, freckles, fair skin, blond, red, or light brown hair, should be extra careful to limit sun exposure. Workers at risk should examine their body regularly because skin cancers detected early can almost always be cured. The most important warning sign is a spot on the skin that is changing in size, shape, or color during a period of 1 month to 1 or 2 years. Susceptible workers should see a physician every year for a professional skin exam.



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Skin cancers often take the following forms: pale, wax-like, pearly nodules, red, scaly, sharply outlined patches, sores that don't heal, and small, mole-like growths (melanoma), the most serious type of skin cancer. **If you find such unusual skin changes, see a health care professional immediately.**

Workers susceptible to skin cancer can prevent harmful sun exposure by the following.

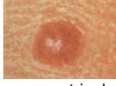







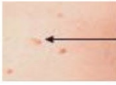
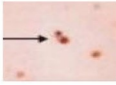
- Limit exposure during peak sunlight hours as UV rays are most intense between 10 a.m. and 4 p.m. If you must work outdoors in direct sunlight during peak UV intensity hours, cover up. Do not get burned as skin can burn in as little as 5-10 minutes under peak UV intensity.
- Cover up by wearing tightly-woven clothing that blocks out light. Wear a wide brimmed hat (not a baseball cap), like a landscaper's type hat. A wide brimmed hat is ideal because it protects the neck, ears, eyes, forehead, nose, and scalp, which are all areas commonly to develop cancerous growths.
- If you can't cover up, use sunscreen with a sun protection factor (SPF) of at least 15 which blocks 93 percent of UV rays on exposed skin. The higher the SPF factor, the higher the protection. Wear sunscreen that blocks both UVA and UVB radiation (broadband or spectrum protection) to guard against skin cancer. Be sure to follow application directions on the bottle.
- Lastly to protect the eyes, wear UV-absorbent, wrap-a-round safety glasses, not sunglasses, when outdoors. Safety glasses provide more protection than more expensive sunglasses and still block 98 to 100 percent of UVA and UVB radiation.

In order to prevent occupational skin disease, workers must be aware of the skin hazards of the chemicals they work with and amount of sunlight exposed to. Knowing the hazards and taking the precautions necessary to eliminate or limit exposure are key. If workers are not sure about chemical skin

hazards, exposure to sunlight or how to protect themselves, they should ask management or a safety professional for more information. Don't wait until it's too late.

The ABCDE checklist

The ABCDE guideline is one of two commonly used strategies for early detection of melanoma.

A	Asymmetry: Moles that have asymmetrical appearance. If you draw a line through this mole, the two halves will not match.		
		symmetrical	asymmetrical
B	Border: Uneven, scalloped, jagged, or notched borders		
		even borders	uneven borders
C	Color: A mole with more than one color.		
		one color	multi colored
D	Diameter: The diameter of the mole is usually larger than a pencil eraser, (1/4 inch or 6 mm). They can be smaller, though.		
		smaller than 1/4 in.	larger than 1/4 in.
E	Evolution: Moles that evolve suddenly in size, shape, color, elevation, crusting, itching, or other traits.		
		ordinary	evolving

For more information about preventing, detecting, and treating skin cancer, contact the Skin Cancer Foundation at <http://www.skincancer.org>

www.osha.gov

<https://www.cdc.gov/niosh>

REFERENCES

Rogers HW, Weinstock MA, Feldman SR, Coldiron BM. Incidence estimate of nonmelanoma skin cancer (keratinocyte carcinomas) in the US population, 2012. *JAMA Dermatol* 2015; 151(10):1081-1086.

County Of Riverside

Standard Safety Operation Manual



DOCUMENT NUMBER: 1001

REVISED DATE: 2/4/04

SUBJECT: General Safety Rules

General Work Procedures

GENERAL REQUIREMENTS

The General Safety Rules contained in this section are not considered to be a replacement for specific safety training of employees or the development of job specific safety procedures and guidelines by departments and agencies.

A. Supervisors at all levels are responsible for the enforcement of safety rules among employees under their supervision. As such, supervisory personnel should review and discuss with their employees all rules which apply to the department or agency's specific

B. As a condition of employment, employees must obey all established safety rules and regulations.

Fire Prevention

heater in such a manner as to permit ignition.

1. No open flames or smoking shall be permitted in areas where flammable gases or liquids are stored or used. "No Smoking" signs shall be posted.
2. Flammable liquids shall be stored and properly labeled in approved safety cans. Drums of flammable liquids shall be stored in an upright position, and dispensing shall only be done with an approved crank-type pump. All drums of flammable liquids shall be properly grounded.
3. The dispensing of flammable liquids shall be done in an approved mixing and dispensing room or in the open and well away from open flames and other sources of ignition, and all containers shall be grounded or bonded.
4. Approved fire extinguisher (CO₂, dry chemical, Halon) shall be provided in all areas where flammable and combustible liquids are stored, dispensed, mixed or handled.
5. Open-flame heaters, including water heaters, shall be properly guarded and located. No clothing or combustible material shall be stored in close proximity to any open-flame or electric
6. Care should be exercised in the correct location and selection of a proper type of fire extinguisher. Employees must know the location and proper use of fire extinguisher and hose lines.
7. In the event that circumstances require the use of CO₂ or Halon fire extinguisher in enclosed spaces or manholes, extreme caution shall be exercised to insure that no one enters the enclosed space until the carbon dioxide or Halon has been expelled by ventilation.
8. Carbon-dioxide, Halon or dry-chemical type fire extinguishers should be used on electrical fires. Water-type fire extinguishers shall not be used to fight electrical fires as the steam may conduct electricity. Halon is best for use on sensitive electronic equipment, such as computers.
9. All departments shall ensure periodic inspection and proper care of fire extinguishers. When an extinguisher appears to be in doubtful condition, it must be reported to the supervisor immediately. All fire extinguishers shall be serviced at least once a year and immediately after being used.

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10. Exit signs and directional exit signs, when required, shall be properly maintained. Exit doors must be unlocked when the building is occupied and free passage to and through these exits must be maintained at all times. Know the exits from the building in which you work.
11. Passageways and work areas around fire-fighting equipment must be kept unobstructed at all times.
12. Oil and paint-soaked rags shall be stored in approved safety containers. Disposal of such rags shall be in safe receptacles placed outside the building daily, or in approved safety containers.
13. All waste materials, other than minor amounts in waste baskets in areas of constant supervision, shall be stored in covered metal or metal-lined receptacles or bins.
14. Report fires promptly to the Fire Department. Do not risk your life in trying to extinguish a fire which may get out of control.
15. Your job in fire prevention is to keep ignition sources that start fires away from things that burn.
16. If you see a fire hazard and cannot do anything about it, report it at once to your supervisor.
17. Before welding or cutting operations begin, all flammable and combustible items will be removed from the vicinity. An ABC class fire extinguisher should be readily available for emergency use.
18. Do not use gasoline or other highly flammable liquids for cleaning. Use only approved solvents.
19. All gasoline powered equipment should be refueled outdoors whenever possible or in a well-ventilated area. Vehicles should be turned off when refueling.



If further assistance is needed
Contact the Safety Division
951-955-3520

HEAT ILLNESS: Do you know what to look for



Workers who are exposed to extreme heat or work in hot environments may be at risk of heat stress. Exposure to extreme heat can result in occupational illnesses and injuries. Heat stress can result in heat stroke, heat exhaustion, heat cramps, or heat rashes. Heat can also increase the risk of injuries in workers as it may result in sweaty palms, fogged-up safety glasses, and dizziness. Burns may also occur as a result of accidental contact with hot surfaces or steam.

Workers at risk of heat stress include outdoor workers and workers in hot environments such as fire-

fighters, bakery workers, farmers, construction workers, miners, boiler room workers, factory workers, and others. Workers at greater risk of heat stress include those who are 65 years of age or older, are overweight, have heart disease or high blood pressure, or take medications that may be affected by extreme heat.

Prevention of heat stress in workers is important. Employers should provide training to workers so they understand what heat stress is, how it affects their health and safety, and how it can be prevented.

[Title 8 Section §3395. Heat Illness Prevention](#)

HEAT STROKE

Heat stroke is the most serious heat-related disorder. It occurs when the body becomes unable to control its temperature: the body's temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. When heat stroke occurs, the body temperature can rise to 106 degrees Fahrenheit or higher within 10 to 15 minutes. Heat stroke can cause death or permanent disability if emergency treatment is not given.

Symptoms

Symptoms of heat stroke include:

- Hot, dry skin or profuse sweating
- Hallucinations
- Chills
- Throbbing head-

ache

- High body temperature
- Confusion/dizziness
- Slurred speech

First Aid

Take the following steps to treat a worker with heat stroke:

- Call 911 and notify their supervisor.
- Move the sick worker to a cool shaded area.
- rapidly cool the worker using methods such as:

- Fanning their body.
- Spraying, sponging, or showering them with water.
- Soaking their clothes with water.
- Immersing up to the neck in cold water

HEAT EXHAUSTION

Heat exhaustion is the body's response to an excessive loss of the water and salt, usually through excessive sweating. Workers most prone to heat exhaustion are those that are elderly, have high blood pressure, and those working in a hot environment.

Symptoms

Symptoms of heat exhaustion include:

- Heavy sweating
- Extreme weakness or fatigue
- Dizziness, confusion
- Nausea
- Clammy, moist skin
- Pale or flushed complexion
- Muscle cramps
- Slightly elevated body temperature

First Aid

Treat a worker suffering from heat exhaustion with the following:

- Have them rest in a cool, shaded or air-conditioned area.
- Drink fluids gradually (4oz. Every 15min.) Water best choice.
- Have them take a cool shower, bath, or sponge bath.

HEAT SYNCOPE

Heat syncope is a fainting (syncope) episode or dizziness that usually occurs with prolonged standing or sudden rising from a sitting or lying position. Factors that may contribute to heat syncope include dehydration and lack of acclimatization.

Symptoms

Symptoms of heat syncope include:

- Light-headedness
- Dizziness
- Fainting

First Aid

Workers with heat syncope should:

- Sit or lie down in a cool place when they begin to feel symptoms.
- Slowly drink water, clear juice, or a sports beverage.

HEAT CRAMPS

Heat cramps usually affect workers who sweat a lot during strenuous activity. This sweating depletes the body's salt and moisture levels. Low salt levels in muscles causes painful cramps. Heat cramps may also be a symptom of heat exhaustion.



Symptoms

Muscle pain or spasms usually in the abdomen, arms, or legs.

First Aid

Workers with heat cramps should:

- Stop all activity, and sit in a cool place.
 - Drink clear juice or a sports beverage.
 - Do not return to strenuous work for a few hours after the cramps subside
- because further exertion may lead to heat exhaustion or heat stroke.
- Seek medical attention if any of the following apply:
 - The worker has heart problems.
 - The worker is on a low-sodium diet.
 - The cramps do not subside within one hour.