

# V.I.E.W.S.

IEWS & INFORMATION ON ENVIRONMENTAL & WORKPLACE SAFETY



## SUMMER IN THE CITY: BE ALERT, BE PREPARED, STAY COOL

**W**ork performed outdoors may expose a person to extremes of heat and cold, including exposure to the sun’s radiation or wind chill. Extremes of heat and cold are also possible in indoor work environments. The effect on employees of extreme temperatures can go beyond mere discomfort and pose serious health and safety consequences including hypothermia, frostbite, heat stress, and heat stroke.

**Heat exhaustion** – a condition that requires immediate attention but is not usually life-threatening; however, in some cases, it can lead to heat stroke, which requires emergency medical treatment. Symptoms include dizziness, nausea, vomiting, headaches, weakness, profuse sweating, excessive thirst, muscle aches and cramps, agitation or irritability, and sometimes unconsciousness. Body temperature is normal to 102°F. Treatment involves moving the victim to a cool place, providing plenty of fluids and monitoring to ensure the condition does not progress to heat stroke.

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**Heat stress** – a general term referring to the effects of work in extreme heat conditions. It is more likely to occur in conditions of high humidity, with a lack of fluids or a rapid loss of body fluids and to affect non-acclimatized persons. The more severe disorders that may occur include heat exhaustion and heat stroke. Thermal discomfort may be experienced even when there is little likelihood of a serious threat to health (e.g., when air conditioning is lacking or not working to optimum effect). Preventive steps should aim to reduce thermal discomfort as much as is practicable, but preventing heat stroke and heat exhaustion is critical.

**Heat stroke** — a medical emergency that occurs when body temperature rises to a level that seriously impairs function and the ability to regulate body temperature fails. It requires immediate medical attention. If body temperature rises too high, it may cause death. Symptoms include:

1. Confusion, severe restlessness, anxiety, disorientation or delirium.
2. Fast heart rate.
3. Hot, dry, flushed skin with no sweating (classic heatstroke) or with excessive sweating (“exertional” heatstroke).
4. Unconsciousness for longer than a few seconds.
5. Convulsion (seizure).
6. Moderate to severe shortness of breath.
7. A body temperature over 104°F (40°C) after exposure to a hot environment.
8. Severe vomiting and diarrhea.

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## **Hot Environments**

One method to control body temperature in hot environments is to encourage the evaporation of sweat from the surface of the body. Evaporation is highest when humidity is low and the air movement is high.

### **THESE SAFETY PRECAUTIONS SHOULD BE TAKEN IN HOT CONDITIONS:**

- Where appropriate, provide and encourage the use of mechanical aids (such as tractors, forklifts, electric saws, mechanical lifters).
- Isolate workers from heat sources and provide shade where possible, at least for rest periods. Separate from high heat as far as possible or insulate plant, pipes, walls or roofs.
- Ventilate the work area to provide a flow of air (cooled where feasible or for direct cooling of workers in extremely high heat). This is particularly important where hot work processes generate radiant heat and/or high humidity.
- Use fans to circulate airflow (e.g., overhead ceiling fans).
- Remove heat by exhausts or other sources to the outside of the building.
- Monitor temperature, humidity and workers' physical response to environmental conditions.
- Acclimatize workers to hot conditions over a period of time. For workers with previous high heat job experience, the regimen should be 50% exposure on day one, 60% on day two, 80% on day three, and 100% on day four. For new workers without high heat job experience, the regimen should be 20% on day one, with a 20% increase in exposure each additional day (*Criteria for a Recommended Standard--Occupational Exposure to Hot Environments*. NIOSH Publication No. 86-113, April 1986).
- Provide frequent rest breaks and/or rotate duties to allow people to cool down. Consider work-rest regimes. Ensure that appropriate work and rest regimes relative to the physical fitness and general health of employees exposed to heat or cold are implemented.
- Provide PPE such as face shields for workers exposed to radiant heat and flames.
- Schedule heavy work and tasks that require the wearing of personal protective equipment (PPE) for cooler times of day (or year).
- Provide water and encourage workers to make up for body fluid lost through sweating.
- Provide employees with information and training so they can recognize the symptoms of heat exhaustion, heat stress and heat stroke in themselves and their co-workers.
- Develop first aid and emergency procedures - and make sure that they are understood.

## **Outdoor Sun (UV) Exposure**

When working outdoors in direct sunlight, protection from the sun's UV rays is needed to reduce the risk of skin damage. These steps should be followed when working outdoors and exposed to direct sunlight for an extended time.

- Wear protective clothing such as a brim hat, long pants and long sleeved shirts.
- Consider the use of sunscreens. If using sunscreens, choose a sunscreen with a SPF (sun protection factor) of at least 15, and one that is water-resistant, so that it can withstand humidity and sweat. Avoid products like baby oil, cocoa butter or skin oils that do not protect against sunburn.
- Limit exposure during peak UV hours (10 am to 2 pm) whenever possible.

Employees who regularly work outdoors (greater than 5 hours per week) should also perform routine self examinations for signs of skin cancer. Check for danger signs, including any wound, sores or lumps (especially if brown or blue in color), or moles that grow or change color.

If a change in skin color or texture looks suspicious, get a medical opinion. Employees should be encouraged to advise their supervisor about any sun-related condition or medical diagnosis that may increase their risk of illness. If the steps taken to manage UV sunlight exposure have not prevented the recurrence of UV exposure symptoms, then contact Bureau EHS to perform a more comprehensive assessment.

# O.E.H.S.C. INDEX OF POLICIES AND PROCEDURES

*The date of the latest revision is posted next to each policy. Printed policies should be correlated with this listing and binder volume numbers as well. This listing is also published on Pipeline, Health & Safety, Environmental and Health & Safety pages, Policy Index link.*

## **PROGRAM OVERVIEW & MANAGEMENT VOL. I**

- Program Improvement/Auditing (02/06/04) Rev.1.

## **PROGRAM OVERVIEW & MANAGEMENT PROCEDURES VOL II**

- Employee EHS Concerns Procedure (11/03/05) Rev. 0.
- Injury and Illness Investigation and Record keeping (10/15/04) Rev. 0.
- Medical Consultation and Exposure/Medical Records (05/06/04) Rev. 0.
- Spill Prevention, Environmental Release Reporting & Investigation (03/29/06) Rev. 2.

## **HEALTH & SAFETY VOL. III**

- Asbestos Management (12/05/03) Rev.0.
- Bloodborne Pathogens (11/26/03) Rev.0.
- Confined Space Entry (09/28/05) Rev.1.
- Contractor Selection and Management (12/31/04) Rev.0.
- Control of Hazardous Energy (Lock-Out/Tag-Out) (2/1/07) Rev. 1.
- Cranes and Hoists (4/12/06) Rev. 3.
- Emergency Planning Policy (03/20/03) Rev. 0.
- Hazard Communication/Right to Know Program (12/31/03) Rev.1.
- Ergonomics (02/17/04) Rev. 0.
- Excavation and Trenching (08/31/03) Rev. 0.
- FDNY Certificate of Fitness and Related Permits (07/16/04) Rev. 0.
- Hazard Markings and Color Coding (12/31/03) Rev.1.
- Hearing Conservation (10/27/03) Rev. 0.
- Hot Work (1/31/07) Rev. 3.
- Lead Management (02/06/04) Rev.0.

- Mercury Management (12/31/03) Rev. 0.
- Personal Protective Equipment (12/06/02) Rev.0.
- Powered Industrial Trucks (04/30/04) Rev.0.
- Respiratory Protection (04/11/03) Rev. 0.
- Sanitation, Disease Prevention, Hygiene (03/12/04) Rev. 0.
- Traffic Work Zone Safety (12/31/04) Rev.1.
- Walking/Working Surfaces—Scaffolding and Aerial Lifts (11/26/03) Rev.0.

## **Health and Safety Guidelines**

- Compressed Gas Cylinders Handling Storage and Use (04/13/04) Rev. 0.
- Dry Grinding Operations (01/13/04) Rev. 0.
- Guarding In-ground/In-floor Openings (02/01/07) Rev. 0.
- Extreme Hot and Cold Weather Guide (3/15/07) Rev. 0.
- Tractor Mowing Operations (1/31/05) Rev. 1.

## **ENVIRONMENTAL, VOL IV**

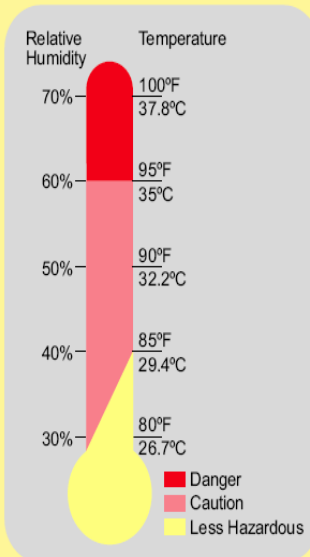
- Chemical Bulk Storage Tank and Container Mgmt. (08/31/06) Rev. 1.
- Environmental Permit Management (04/30/04) Rev. 0.
- Environmental Remediation Sampling and Quality Assurance (12/31/03) Rev. 0.
- EPCRA and Related Hazardous Materials Reporting (07/16/03) Rev. 0.
- Hazardous Waste Identification (02/07/03) Rev. 0.
- Hazardous Waste Management (02/07/03) Rev. 0.
- Hazardous Waste Manifest (01/30/06) Rev. 1.
- Pesticide Management (04/01/06) Rev. 1.
- Petroleum Bulk Storage Tank & Container Management (08/31/06) Rev. 1.
- Pollution Prevention (03/31/04) Rev. 0.
- Real Property Acquisition/ Due Diligence (05/30/04) Rev.1.
- Remediation Management (03/31/04) Rev. 1.
- Stormwater and Wastewater Management (10/22/03) Rev. 0.
- Universal Waste Management (08/31/06) Rev. 1.
- Used Oil Management Procedure (02/07/03) Rev. 0.



## The Heat Equation

**HIGH TEMPERATURE + HIGH HUMIDITY  
+ PHYSICAL WORK = HEAT ILLNESS**

When the body is unable to cool itself through sweating, **serious** heat illnesses may occur. The most severe heat-induced illnesses are heat exhaustion and heat stroke. If left untreated, **heat exhaustion** could progress to **heat stroke** and possible **death**.



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## Heat Exhaustion

### What are the symptoms?

**HEADACHES; DIZZINESS OR LIGHTEADEDNESS; WEAKNESS; MOOD CHANGES SUCH AS IRRITABILITY, CONFUSION, OR THE INABILITY TO THINK STRAIGHT; UPSET STOMACH; VOMITING; DECREASED OR DARK-COLORED URINE; FAINTING OR PASSING OUT; AND PALE, CLAMMY SKIN**

### What should you do?

- Act immediately. If not treated, heat exhaustion may advance to heat stroke or death.
- Move the victim to a cool, shaded area to rest. Don't leave the person alone. If symptoms include dizziness or lightheadedness, lay the victim on his or her back and raise the legs 6 to 8 inches. If symptoms include nausea or upset stomach, lay the victim on his or her side.
- Loosen and remove any heavy clothing.
- Have the person drink cool water (about a cup every 15 minutes) unless sick to the stomach.
- Cool the person's body by fanning and spraying with a cool mist of water or applying a wet cloth to the person's skin.
- Call 911 for emergency help if the person does not feel better in a few minutes.

## Heat Stroke—A Medical Emergency

### What are the symptoms?

**DRY, PALE SKIN WITH NO SWEATING; HOT, RED SKIN THAT LOOKS SUNBURNED; MOOD CHANGES SUCH AS IRRITABILITY, CONFUSION, OR THE INABILITY TO THINK STRAIGHT; SEIZURES OR FITS; AND UNCONCIOUSNESS WITH NO RESPONSE**

### What should you do?

- Call 911 for emergency help immediately.
- Move the victim to a cool, shaded area. Don't leave the person alone. Lay the victim on his or her back. Move any nearby objects away from the person if symptoms include seizures or fits. If symptoms include nausea or upset stomach, lay the victim on his or her side.
- Loosen and remove any heavy clothing.
- Have the person drink cool water (about a cup every 15 minutes) if alert enough to drink something, unless sick to the stomach.
- Cool the person's body by fanning and spraying with a cool mist of water or wiping the victim with a wet cloth or covering him or her with a wet sheet.
- Place ice packs under the armpits and groin area.

### How can you protect yourself and your coworkers?

- Learn the signs and symptoms of heat-induced illnesses and how to respond.
- Train your workforce about heat-induced illnesses.
- Perform the heaviest work during the coolest part of the day.
- Build up tolerance to the heat and the work activity slowly. This usually takes about 2 weeks.
- Use the buddy system, with people working in pairs.
- Drink plenty of cool water, about a cup every 15 to 20 minutes.
- Wear light, loose-fitting, breathable clothing, such as cotton.
- Take frequent, short breaks in cool, shaded areas to allow the body to cool down.
- Avoid eating large meals before working in hot environments.
- Avoid alcohol or beverages with caffeine. These make the body lose water and increase the risk for heat illnesses.

### What factors put you at increased risk?

- Taking certain medications. Check with your health-care provider or pharmacist to see if any medicines you are taking affect you when working in hot environments.
- Having a previous heat-induced illness.
- Wearing personal protective equipment such as a respirator or protective suit.