

DATA SHEET:

GLOVES – TRAINING MATERIALS

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OSHA now requires formal documented training in the proper use of gloves, eyewear, aprons and other protective equipment. Training is needed because I often see workers using the wrong hand protection. Sometimes they use gloves which can be “permeated” by certain solvents--passing through without showing any visible changes.

This data sheet outlines the kind of information that is needed to meet the OSHA Personal Protective Equipment training regulations under 29 CFR 1926.28 and 29 CFR 1910.132-133.

Work Gloves, General information

Disposable or surgical gloves: Only for use against mild irritants and bloodborne pathogens, never for chemical protection.

Fabric Gloves: Made of cotton or fabric blends, they improve grip, protect against mild heat and cold, and mildly abrasive materials.

Leather Gloves: Use against sparks (welding), for scrapping rough surfaces, brief handling of hot materials. Can be used in combination with an insulated liner when working with electricity.

Metal Mesh and Kevlar: used to protect wearers from cuts from cutting tools, sharp instruments, broken glass, etc.

Aluminized fabric gloves: designed to insulate against high heat such as molten metal (foundry pours), gaffing blown glass, old fashioned carbon arc spot lights, etc.

Electrical workers' gloves and linemens' sleeves: Made of natural or synthetic rubber. These come in five classes that are color coded to indicate the maximum voltage they should be used for:

* Red, Class 0, 1,000 volts * Green, Class 3, 26,500 volts * White, Class 1, 7,500 volts
* Orange, Class 4, 36,000 volts * Yellow, Class 2, 17,000 volts

Chemical resistance gloves: usually made of natural rubber, or synthetic polymers called butyl, butadiene, neoprene, acrylo-nitrile, polyvinyl alcohol or vinyl rubbers or plastics. You must consult the manufacturer's "permeation data" for information on the resistance of the gloves from specific oils, solvents, etc. (Do not confuse permeation data with “degradation data” which tells you when the glove will dissolve or be damaged in contact with a solvent.)

Chemical Resistant Gloves: What You Must Be Told. Under the OSHA regulations (29 CFR 1910.132, training for all protective equipment including gloves is required. Subjects include:

LOGISTICS AND GENERAL USE

Location of supply, how get and replace gloves at your worksite.
How to check for holes and damage before putting them on.
How to take them off so the contaminants don't get on your skin.
How to clean them and/or discard them.

HOW TO PREVENT SKIN PROBLEMS

Always use the right glove for the purpose.
Never share the gloves unless they are cleaned and disinfected.
Always wash hands after removing gloves.
Watch for skin reactions to glove materials, chemicals, sweat, etc.

TECHNICAL INFORMATION:

Gloves are made of several types of plastics and natural rubber

* Plastics (e.g. neoprene, nitrile, PVC, butyl)

Each type resists different chemicals
Allergies to them are rare, usually caused by additives

* Natural rubber

Allergies common - rashes, asthma, anaphylactic shock
Use of word "hypoallergenic" prohibited by FDA
Powdering on insides of gloves can make allergies worse

Surgical gloves, whether rubber or plastic, are never for
chemical use--only mild waterborne irritants like soap and water and protection from body
fluid pathogens

Gloves degrade with chemical exposure and age.

They get gummy, cracked, porous, etc.
Degradation usually can be seen visually

Penetration by chemicals:

usually there are no visual signs of chemical penetration
Vaseline, barrier creams, used with gloves worsens penetration

Charts listing Degradation/Penetration times are available

Use only the chart from manufacturer of your gloves
Tell workers where the glove chart is located at the worksite

Demonstrate how the chart is used to select the right gloves

Test worker orally or with written quiz to document comprehension
Sign and date test/training record

GENERAL RULES FOR USING CHEMICAL GLOVES

- * Use the manufacturer's permeability data to select the type of glove that will be a good barrier for the chemicals in the product you are using.
- * Try to avoid gloves containing natural rubber. If rubber latex must be used, try reduced-protein and powder-free gloves. The powder used as a lubricant can increase exposure through skin contact and inhalation.
- * Select the size that is most comfortable.
- * Remove watches, rings, or other jewelry that could puncture gloves while at work.
- * Wash your hands with a pH-neutral soap and clean even the nail beds before putting gloves on. Putting a glove over contaminated skin can trap the contaminant against the skin which can lead to irritation and dermatitis.
- * Do not use soaps containing lotions or hand lotions after washing. They may cause dermatitis when trapped next to the skin and they may adversely affect the integrity of the gloves allowing chemicals to permeate them.
- * Watch for signs of deterioration of the glove material such as swelling on exposure to solvents. Change gloves at the first sign of deterioration. Check again the manufacturer's permeation chart to avoid exceeding the wearing time.
- * To remove the gloves during work, be careful to minimize the contamination of the wrist and hand. First grip the cuff of one glove and pull it toward the tips of the fingers, being careful to turn the glove inside out as you go. While the loosened first glove is still in your hand, grasp the second glove by the cuff and turn it inside-out as you pull it toward the fingertips. Don't touch the contaminated side gloves.
- * Discard the disposable gloves in the appropriate waste container as determined by your safety protocol.
- * Wash again with a pH-neutral soap or cleaner or disinfectant after removing gloves. Avoid lotions contain sensitizing agents, such as lanolin, PABA, or limonene, which can cause allergic reactions.
- * If a skin problem persists, see a physician even if it is a minor irritation.

NATURAL RUBBER: IT CAN CHANGE YOUR LIFE

On a single day last month, I received e-mails from two Local 829 Scenic Artists who were having problems with allergies to natural rubber latex. We have many other members with this same allergy and it is a problem I share with you.

Allergies to natural rubber are serious. Symptoms include: skin rash and inflammation, hives, respiratory irritation, asthma, and systemic anaphylactic shock. Between 1988 and 1992, the FDA (Food and Drug Administration) received reports of 1000 systemic shock reactions to latex. As of June 1996, 28 latex-related deaths had been reported to the FDA.

WHAT IS NATURAL RUBBER? Natural rubber is derived from sap drawn from Hevea trees. It contains a chemical is called isoprene, which can be reacted to form a polymer or plastic-like material called polyisoprene--the fancy name for natural rubber.

The natural latex sap also contains many impurities including about 200 different proteins. Fifty of these proteins can cause allergies. The proteins cannot be completely removed from finished natural rubber products. Gloves labelled "reduced proteins" are less sensitizing, but all natural rubber products can cause allergy. For this reason, the FDA now prohibits the word "hypoallergenic" on latex glove labels.

WHAT PRODUCTS CONTAIN RUBBER? Natural rubber products can be found in thousands of products. Some of these include: surgical and chemical gloves, condoms, balloons, rubber cement, many latex molding products, surgical and eyelash adhesives, and most special effects latex makeup products. Almost all rubber tires contain some natural rubber although the main ingredient is more likely to be a synthetic (butadiene) rubber. The synthetic rubbers do not contain the sensitizing natural proteins.

WHAT IS LATEX? The word "latex" simply means any plastic (polymeric) substance in an essentially water medium. For example, acrylic latex paint is a water dispersion of acrylic polymer. "Acrylic latex" paint contains no rubber. In fact, "latex paints" almost never contain natural rubber.

WHO IS ALLERGIC TO NATURAL RUBBER? The best data on allergy comes from medical personnel since they use gloves for every procedure in which body fluids are encountered. Various experts estimate that the percentage of allergic health care workers at between 10 and 17 percent. This means that better than one out of every ten people who frequently use rubber products will develop the allergy.

WHAT CAN YOU DO IF YOU USE LATEX PRODUCTS?

Natural rubber can be present in thin surgical gloves or in thick chemical resistant gloves. If you use either of these products on the job, consider the following:

- * Try switching to plastic gloves. If rubber latex must be used, try reduced-protein and powder-free gloves. The powder used as a lubricant can increase exposure though skin contact and inhalation.
- * Reduce your exposure to rubber. Use non-latex gloves for food preparation, housekeeping, and all other tasks that do not involve contacts with infectious agents such as blood.

- * Be alert for allergic reactions so you can take action promptly.
- * Wash your hands with a mild soap immediately after removing latex gloves or working with rubber-containing products.
- * Never use hand lotion or barrier creams under gloves because they can leach the proteins out of the rubber and make the situation worse. Lotions and creams also can make rubber and plastic gloves more easily penetrated by germs and chemicals.
- * Clean areas contaminated with latex-containing dust or spilled latex products without raising dust or splashing wash water on yourself.
- * See your doctor if allergy symptoms start. There is no cure, but some medications can reduce symptoms. If you are diagnosed with rubber latex allergy, avoid all products containing natural rubber.
- * Learn about your latex allergies. For instance, you should know that allergies to certain foods like avocados, potatoes, bananas, tomatoes, chestnuts, kiwi fruit, and papaya are also associated with latex allergy.

If you need more technical information on natural rubber, contact me. If you have had serious reactions to rubber such as hives, asthma, or anaphylactic shock, you will need to dramatically alter your life style and work. Monona Rossol, Health & Safety Officer

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FASHION DESIGNER DIES FROM LATEX ALLERGY

The Daily Telegraph, United Kingdom, Friday June 9, 2000 p. 5

A clipping from ***The Daily Telegraph*** was brought to our attention. It contains an item which should provide warning to users of natural rubber latex cosmetic products such as eye lash adhesive, rubber cements and glues, and latex special effects makeup.

A fashion designer died within an hour when she suffered an allergic reaction to glue that she had used to attach hair extensions, an inquest heard yesterday.

Within minutes of applying the American Super Hair bonding glue, Nicola Faulkner, 28, complained that her scalp was itching intensely. Her eyes, lips, tongue became swollen and a rash spread over her body as she reacted to the latex in the glue. By the time an ambulance arrived, her lungs had collapsed and pockets of air were bubbling under her skin.

Miss Faulkner...was pronounced dead at hospital an hour later on March 12. Southwark Coroner's Court heard she had used the glue once before without any problems. A pathologist from University Hospital Lewisham told the inquest that Miss Faulkner died from anaphylactic shock due to a latex reaction.
