

## Preventing Occupational Dermatitis

Occupational dermatitis is the term used to describe any inflammation of the skin which results from exposure to irritants in the workplace. Such exposure may produce skin reactions from slight reddening or mild itching to a rash or swollen, weeping, or open sores. Industrial dermatoses account for more than half of all workers' compensation claims for occupational diseases, and these claims come from workers in all types of industry.

### SKIN REACTIONS

#### CONTACT DERMATITIS

There are two kinds of skin reaction. The first is called contact dermatitis because the irritant causes an immediate and one time reaction upon contact with the skin. While this kind of dermatitis may be serious enough to require medical treatment, workers can return to their jobs as soon as the dermatitis is brought under control. Irritants that commonly cause contact dermatitis are plastics, synthetic resins, solvents, chemical lubricants, acids and caustics.

#### SENSITIZATION DERMATITIS

The second kind of skin reaction is a more complex medical problem. It is called sensitization dermatitis because the reaction is delayed.

The delay can be as short as a day, but can be as long as several months. Workers can become sensitized through prolonged and repeated exposures to a

substance, although an initial exposure to a substance may result in sensitization with a reaction occurring with all subsequent exposures.

A major characteristic of sensitization dermatitis is the increasing severity of reaction upon repeated exposures. Typical sensitizers include epoxy resins and hardeners, azo dyes, bichromates, coal tar derivatives, certain spices, pollen and some antibiotics. Other substances may act indirectly to cause sensitization dermatitis. For instance, coal tar, pitch, some crude petroleum, fluorescent dyes, and some plants can sensitize the skin to light so that a worker might develop sunburn, skin rashes or hives more easily.

Some chemicals can cause both contact dermatitis and sensitization dermatitis.

### IRRITANTS

There are five general kinds of irritants:

**CHEMICAL COMPOUNDS** such as nitric acids, sulfuric acid, sodium hydroxide, strong soaps, mold solvents, and detergents can produce reactions ranging from chemical burns to mild skin irritation.

**MECHANICAL AGENTS** such as small particles of glass fiber and rock wool insulating materials can get caught in the ridges and folds of the skin and cause irritation and itching.

**PHYSICAL AGENTS** such as excessive heat, cold, sunlight, ultraviolet light, X-rays or other ionizing radiation.

**PLANT POISONS** from several hundred plants, shrubs, and woods including poison oak, poison ivy, chrysanthemums, geraniums and primroses can irritate the skin.

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**BIOLOGICAL AGENTS** such as bacteria, fungi and parasites can cause skin irritation. Packing house workers, bakers, fruit and vegetable handlers, greenhouse and agricultural workers are most often affected by these potential skin irritants.

Inhalation or ingestion of chemicals such as sulfa compounds and antibiotics - most likely to occur in the pharmaceutical trades - accounts for a small percentage of occupational dermatitis.

### PRECAUTIONS

Occupational dermatitis and skin diseases can be eliminated or reduced by following these precautions:

- Eliminate skin contact with irritating chemicals or substances.
- Whenever possible, substitute chemicals with the lowest toxicity and irritant potential for the substance presently used.
- Use engineering controls to minimize worker contact with hazardous substances. When it is necessary for employees to work with highly corrosive or irritation materials, enclosures, guards and mechanical handling facilities may be necessary for safe operation. Suitable exhaust systems should be installed where operations give off dust or fumes.
- Machines and work areas should be kept clean and work room floors should be cleaned daily.
- Containers should be labeled to identify the contents and the hazards and precautions associated with handling the substance.
- An employee education program should be established so that workers who will be exposed to skin irritants are informed about the hazards they face, the precautions to take, and the processes and equipment to use to avoid or minimize exposure.

- Personal protective equipment and clothing are not adequate substitutes for good engineering controls, good housekeeping or a well-informed worker. However, if used intelligently and kept uncontaminated, protective equipment and clothing can minimize skin irritation on operations where it is not practical to control exposures in other ways. Make sure you select the protective material with the most effective skin protection for the agent you are using. This information is often available from equipment suppliers.
- All personal protective equipment and clothing must be kept clean and in good repair. A cleaning procedure should be specified to ensure that irritating materials are removed.
- Protective creams, when used properly and applied frequently, provide limited protection against irritants to hands and arms. Protective creams should be applied after each hand washing; it is good practice to wash hands and arms every two hours during exposure to uncured resins and hardeners. Washing facilities should be provided for employees.

Normally, face and eye protection is required for compounding, mixing and dispensing operations where pressure systems are used or where there is a splashing hazard. Emergency eye wash and showers should be available in close proximity to where the agents are used. If the eye is exposed to the irritant, promptly flush it with plenty of water for at least 15 minutes and seek medical attention.

For further information or assistance, contact your Zenith Safety & Health Consultant.