Skin Care at Work
Skin Protection for Industrial Workers
- A Manager’s Guide
This guide is published by Deb Group: it is published in the interests of occupational health. It is designed to help managers and those responsible for health and safety in the workplace, to keep the skin of employees healthy and undamaged by the workplace environment, focusing on minimizing the risk of occupational dermatitis – the most prevalent type of skin disease reported in the workplace.

This booklet is not intended as a comprehensive treatise on occupational dermatitis, a number of exhaustive works already exist. It is, however, a quick and easily understood guide for those who do not possess a detailed knowledge of the subject, yet nevertheless have an interest and responsibility for the everyday risks of contracting a disease which can incapacitate even the healthiest staff.

After explaining how the skin works and defining occupational dermatitis, dealing briefly with the principal causes, the booklet will provide guidance on implementing a Skin Care Management System to reduce considerably the unnecessary suffering and loss of working time caused by this disease.

WORK RELATED SKIN ILLNESSES CAN INCLUDE:

• Irritant Contact Dermatitis
• Allergic Contact Dermatitis
• Skin Cancer
• Burns
and other skin diseases such as skin discolouration (depigmentation).
Scale of Disease

In 2010, **34,400 recordable skin diseases** were reported by the Bureau of Labor Statistics (BLS) at a rate of **3.4 injuries per 10,000 employees**.

**13 million workers** in the United States are potentially exposed to chemicals that can be absorbed through the skin (The National Institute for Occupational Safety and Health [NIOSH], 2013).

OSD are the second most common type of occupational disease and can occur in several different forms including:

- Irritant contact dermatitis,
- Allergic contact dermatitis,
- Skin cancers,
- Skin infections,
- Skin injuries, and
- Other miscellaneous skin diseases.

Epidemiological data indicate that contact dermatitis constitutes approximately **90-95% of all cases of OSD** in the United States (NIOSH, 2013).

Working Days Lost

**NIOSH has estimated that workplace skin diseases account for 15%-20%** of all reported occupational diseases in the United States, with estimated total annual costs (including lost workdays and lost productivity) **up to $1 billion**.

Causative Agents

The most common agents causing contact dermatitis were soaps and cleaners (27%), wet working (27%) and rubber chemicals and materials (17%).[1]

Occupation and Industry

Within industry the occupational group with the most reported cases of contact dermatitis between 2008-2010 was skilled trades. In terms of specific occupations and frequency of occurrence per 100 000 employees, metal working production and maintenance fitters had most cases (94 per 100 000) followed by printers (52 per 100 000).

The data provided above details the cases of reported skin disease and it is widely accepted that these statistics represent just “the tip of the iceberg” as this type of disease is vastly under reported.

Occupational dermatitis is also a problem at a personal level. It looks and feels unpleasant. It not only hinders workers’ performance and productivity at work, but it also adversely affects their quality of life. Some cases will result in time away from work and if it is not treated quickly and effectively, more serious long-term problems may develop. However, the great majority of cases need never happen. Effective and often simple means of prevention are readily available. When they are properly applied, the incidence of dermatitis can be significantly reduced.

Every business can be affected, this is why it is important to recognize the potential causes and minimize the risk of occupational dermatitis by implementing a Skin Care Management System.

[1] HSE/THOR
To understand why dermatitis occurs we must first learn a little about the human skin - how it functions and how it is constructed.

Skin carries out many purposes, to regulate the body’s temperature, ward off infections and sense heat, cold and vibrations. As long as the surface is unbroken by cuts, abrasions or disease, and the natural secretions are not removed or contaminated, the skin is an excellent barrier.

A person’s skin is as individual as themselves. Its physiology is extremely complex. As the body’s outer layer, it acts not only as a protective barrier from the external environment, preventing substances and microbes reaching our internal organs, but also acts as a barrier retaining vital body fluids.

For simplicity, we can think of it as having two layers, the epidermis and the dermis, as shown in this cross section of the human skin.

The outer layer is the epidermis, which itself consists of several layers, the outer-most layer being the stratum corneum or horny layer consisting of dead cells.

These are only attached loosely, and are constantly being shed and replaced from the layers below. In addition to these cells growing up from the basal layer, the epidermis contains other specialised cells such as pigment cells.

The dead cells are covered by a film of sebum, an oily substance secreted by the sebaceous glands, which helps to keep the skin supple. It is very important to keep this outer layer intact, for in a healthy state it is strongly resistant to bacteria and external agents.

**THE SKIN**

The skin is the body’s largest single organ. The average adult has around 21 square feet of skin, with around 300 million skin cells equating to approximately 10% of their body weight.
Below the epidermis lies the dermis, or true skin, which consists of fibrous and other tissues well supplied with blood vessels. In addition to the nerve endings responsible for the sense of touch and pain, the dermis also contains three other important components.

**These are:**

| Hair follicles - A sheath inside which the hair grows |
| Sebaceous glands - Produce sebum |
| Sweat glands - Produce perspiration |

These three are vulnerable parts of the system since they all connect directly with the surface of the skin. To keep skin healthy, these openings should always be kept as free as possible from industrial soilings, such as oil and grease.

When skin is behaving normally, the sebum forms a protective coating on the surface. But in certain cases these openings can provide direct access for damaging substances.

It can be seen that the “skin system” is quite elaborate. Dermatitis occurs when the structure of the skin is damaged, or the protective mechanisms are thrown out of balance by external agents. These could be such things as: irritant substances, sensitizers or the working environment.
However, by taking the right preventive steps in the first place to minimize, or eliminate altogether, contact with damaging agents and adopting an appropriate skin care programme, the risk of occupational dermatitis can be minimized.

**What is Occupational Dermatitis?**

Many people occasionally suffer from skin infections and conditions which can be classed under the general heading of dermatitis, but which have nothing to do with their working environment.

The symptoms and the seriousness of the condition vary widely. They will depend on the type and length of exposure to the irritant and also on the susceptibility of the person concerned.

Symptoms usually begin with redness and irritation, and occasionally, swelling. Blisters may follow and, if these break, the skin may become infected. Contact with some substances can cause small areas of the skin to thicken, eventually forming rough wart-like growths which may become cancerous.

Any part of the body may be affected. Very often it is the hands and arms, but if the guilty substance is in the form of dust or fumes, then inflammation may also occur on any exposed areas.

Dermatitis is not contagious, but if untreated may spread to other parts of the body. Correct treatment at an early stage is essential. If anyone suspects they may have a skin problem developing they should seek medical advice as soon as possible.

There are two types of dermatitis:

**Irritant Contact Dermatitis**
Dermatitis caused by irritation to the skin from contact with a substance that dries out and damages the skin [e.g. solvents, oils, detergents], environmental conditions, abrasion or wet working. It is possible to make a complete recovery from irritant contact dermatitis.

**Allergic Contact Dermatitis**
Dermatitis caused by an allergic reaction to something that comes into contact with the skin. Once the skin is sensitised to the particular substance, this form of dermatitis can reoccur whenever contact is made with the substance.

However, by taking the right preventive steps in the first place to minimize, or eliminate altogether, contact with damaging agents and adopting an appropriate skin care programme, the risk of occupational dermatitis can be minimized.

**OCCUPATIONAL DERMATITIS**

Occupational dermatitis can be defined as an inflammation of the skin caused by the working environment or by skin contact with a damaging substance.
External Agents That Can Affect The Skin

The following can affect the skin:
- Contact with chemicals and hazardous substances, including irritants
- Contact with sensitisers (allergens)
- Wet working
- Environmental conditions
- Abrasion

Contact with chemicals and hazardous substances

Irritants:
Irritants will affect any skin, whether healthy or already damaged in some manner. Medical treatment is effective and if contact is eliminated or reduced, the condition is unlikely to recur. However, repeated exposure to irritants can lead to long term skin damage.

The following are examples of substances which can potentially cause irritant contact dermatitis:

1. Chemicals

Acids/Alkalis: These damage the structure of the skin and may remove the skin too if the concentration is high enough, or contact time long enough. Examples of these are surface treatment chemicals, wet cement, alkaline degreasers, caustic soda, descalers, derusting agents, and battery acid.

Oxidising/Reducing Agents: These will burn the skin and examples of these are bleach, potassium permanganate, hydrogen peroxide, nitric acid and oxalic acid.

Detergents & Water-Based Chemicals: Long periods of immersion in even the mildest water-based fluids (see “Wet Working”) will also reduce the barrier action of the skin and increase the rate at which the outer cells of the epidermis flake off (Fig1). Examples of these are water-based cutting fluids, water-based paints, wet plaster and many specialist cleaning and disinfecting chemicals; and even included are general cleaning chemicals and detergents.

2. Solvents

These remove the natural oils from the skin and leave it more open to damage by other substances. Paraffinic-type substances, petrol, diesel, white spirit and thinners are a few of the many solvents which may be dangerous to the skin if not properly handled.

In addition, there are still many substances that are solvent-based, such as some paints, resins, sealants and adhesives which will all be potentially damaging to the skin.

It may take the skin several hours to replenish its natural sebum level after only brief contact with solvents or solvent-based substances like these.
3. Mineral Oils

There are many types of mineral oil based substances used in the workplace, for example: engine and machine oils, lubricants, some cutting fluids and greases.

These can often cause “Oil Acne” (fig.2). Blackheads and pimples appear on parts of the body coming into frequent contact with oil and oily clothing. It is due partly to blocking of the hair follicles by dirt. Infection is then quite likely.

If contact with mineral oils is prolonged, then a more serious condition may ensue. The presence of warty or other swellings (fig.3), ulcers and sore patches of the skin which do not heal, may signal the development of skin cancer. In fact, used engine and some machine oils are now known classified carcinogens.

The same dangers also apply to those working with pitch, tar and some of their derivatives. In addition, vegetable oil based substances can cause oil acne in the same way as mineral oils.

Apart from the hands, face and areas in direct contact, covered areas may also be affected. Particularly important for male workers is the scrotum (fig 4). Problems can occur where oily cloths are habitually being put inside overall pockets, or regular failure to wash hands before to going to the toilet.

These conditions respond well to treatment in their early stages, with very little personal inconvenience or loss of working time. Delay, however, could cause more severe problems.

Skin contact should always be kept to a minimum and soiled skin and clothing should be washed carefully and frequently.

**REMEMBER**

Prolonged contact with oily materials can give rise to cancer of the skin. The habit of changing into oil-stained overalls before work should be stopped immediately.
**Sensitizers (or Allergens)**

These do not affect everyone exposed to them – they affect only a relatively small proportion of people, who, for whatever reason, are sensitive to them. The dermatitis does not appear on first contact with a substance but occurs only after subsequent contact, sometimes over prolonged periods e.g. years. The individuals affected eventually become “sensitized” (allergic) to that substance.

Once a person has become sensitized to one of these substances they will probably remain so for the rest of their lives, or at least for a long time, even if contact is minimal. They may also become sensitive to other substances as well; this is called cross-sensitization.

Some of the above “irritant” substances and others such as pollens, flour, wood dusts, dry cement, epoxy resins, isocyanate paints, formaldehyde, formaldehyde donors, some cosmetic preservatives, vegetables, fruit, animal feeds and antibiotics can also cause sensitization in certain people. It is interesting to note that many substances that are natural in origin can cause sensitization in some people.

**IRRITANTS & SENSITIZERS**

The distinction between irritants and sensitizers is not always clear and some substances can cause both types of reaction. There are a large number of substances known to cause dermatitis and they are used in a great variety of industries and processes. Any dermatitis caused by these irritants or sensitizers may subsequently be infected by bacteria or fungi.

**Working Environment**

In addition to substances that the skin may come in to contact with, the work environment can also affect skin condition. Temperature, humidity and wind are all elements which, in more adverse conditions, can affect the skin’s ability to protect itself.

Outdoor workers in particular need to protect against adverse weather conditions. For example, the sun’s UV-A (aging) and UV-B (burning) rays are both known to damage the skin, potentially causing skin cancer. Indeed, skin cancer is the most common form of cancer in North America. For more information on risks to outdoor workers, see our publication “Skin Care at Work, Skin Protection for Outdoor Workers – A Manager’s Guide” [http://events.debgroup.com/sun-awareness-protection-for-outdoor-workers-ca](http://events.debgroup.com/sun-awareness-protection-for-outdoor-workers-ca).

However, even indoor workers can be faced with adverse temperature [hot or cold] and humidity conditions.

**Skin Abrasion**

There are many products and substances used in the workplace that can damage the skin simply through their abrasive nature. For example, contact with sand, plaster, cement, masonry and abrasive disks and pads can lead to the skin becoming scratched and damaged. This will leave the skin more vulnerable to the possible effects of contact with irritants or potential sensitizers.
Employer Responsibility

In Canada, every workplace is regulated by either the Federal or Provincial government, and is required by law to meet applicable occupational health legislation.


For non-federal workplaces, the employment standards that regulate the conditions of work are defined by a provincial or territorial ministry of labour http://www.labour.gc.ca/eng/regulated.shtml.

<table>
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<tr>
<th>PROVINCE/TERRITORY</th>
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| British Columbia   | Workers’ Compensation Act  
|                    | Occupational Health and Safety Regulation, Part 5 |
| Alberta            | Occupational Health and Safety Code  
|                    | Part 29 Workplace Hazardous Materials Information System (WHMIS), Sections 395 to 414 |
| Saskatchewan       | Occupational Health and Safety Act  
|                    | Occupational Health and Safety Regulations, Part XXII |
|                    | Part 35, Workplace Hazardous Materials Information Systems Application |
| Ontario            | Occupational Health and Safety Act  
|                    | Workplace Hazardous Materials Information System (WHMIS) Regulation |
| Quebec             | Act Respecting Occupational Health and Safety Regulation Respecting Information on Controlled Products |
| New Brunswick      | Occupational Health and Safety Act  
|                    | Workplace Hazardous Materials Information System Regulation |
| Nova Scotia        | Occupational Health and Safety Act  
|                    | Workplace Hazardous Materials Information System (WHMIS) Regulations |
| Prince Edward Island | Occupational Health and Safety Act  
|                    | Workplace Hazardous Materials Information System Regulations |
| Newfoundland       | Occupational Health and Safety Act  
|                    | Workplace Hazardous Materials Information System (WHMIS) Regulations |
| Yukon              | Occupational Health and Safety Act  
|                    | Workplace Hazardous Materials Information System Regulations |
| Northwest Territories & Nunavut | Safety Act  
|                    | Work Site Hazardous Materials Information System Regulations |

Source: Canadian Centre for Occupational Health and Safety (CCOHS), http://www.ccohs.ca/oshanswers/legisl/intro_whmis.html
Workplace Hazardous Materials Information System

The Workplace Hazardous Materials Information System (WHMIS) is a Canada-wide system designed to give employers and workers information about hazardous materials used in the workplace. Under WHMIS, there are three ways in which information on hazardous materials is to be provided:

- labels on the containers of hazardous materials;
- material safety data sheets to supplement the label with detailed hazard and precautionary information; and
- worker education programs.

The supplier of the hazardous material provides the labels and material safety data sheets to the employer. The employer passes the information on to the worker and provides education programs.

Why was WHMIS developed?

The purpose of WHMIS is to give all working Canadians a uniform and appropriate quantity and quality of information about hazardous materials used in the workplace.

Many Canadian workers are exposed to hazardous materials on the job. In the past, information about these materials has often been incomplete, inconsistent or not available at all. This means that employers and workers were often unaware of the hazards of a material in the workplace, and of the necessary handling precautions. This lack of awareness can cause serious occupational illness and injury.

By setting standards for the type and amount of information to be given to the users of hazardous materials, it is expected that accidents and diseases caused by hazardous materials in the workplace will be reduced.[1]

A number of hazardous materials can have a direct implication for the skin. As such, when assessing substances which may represent a danger to the skin, employers need to take note of the risk and safety phrases and warning symbols.

Use of Material Safety Data Sheets (MSDSs)

Employers are responsible for obtaining from suppliers an MSDS for each controlled product used in their workplaces. The employer may also develop an MSDS to use at the workplace instead of a supplier MSDS, provided that the employer MSDS contains at least the same information found on the supplier MSDS and indicates that a supplier MSDS is available. MSDSs are to be updated at least every three years or as soon as further information relating to the hazard becomes available for a material.

As an important source of detailed information on controlled products, supplier and employer MSDSs for controlled products are to be readily accessible to employees at each work site and supplied or made accessible to safety and health committees or representatives.

Employee Education and Training

Besides disclosing to workers hazard information on controlled products, employers are to ensure that instruction is provided for employees who handle, are exposed to, or are likely to handle or be exposed to hazardous materials. This should result in the employees becoming more aware of and better able to apply hazard information to ensure their health and safety.

The instruction should include a description of all the mandatory and performance-oriented aspects of WHMIS and of the responsibilities of the employer and employees. The employee education program should include:

- instructions with respect to the product identifier;
- instruction on the content required on the supplier and workplace label and the purpose and significance of the information contained on the label;
- instruction on the content required on an MSDS and the purpose and significance of the information contained on an MSDS;
- procedures for the safe handling, use, storage and disposal of a controlled product, including information relating to the disposal of a controlled product contained or transported in piping systems and vessels; and
- procedures to be followed in the case of an emergency involving a controlled product.

Employers are required to consult with health and safety committees or representatives, where they exist, during the development of education and training activities with respect to exposure to hazardous materials. Employers are required to review the information and training provided to workers concerning hazardous materials in consultation with the health and safety committees or representatives at least annually, or more frequently if new hazard information becomes available or if required by a change of conditions.

Hazard Identification and Ingredient Disclosure [1]

Employers are responsible for evaluating those products produced in a workplace process using the hazard criteria identified in the Controlled Products Regulations. Subject to a confidential business information exemption and specific concentration cut-off limits, all ingredients of a controlled product that fall into any of the following categories must be disclosed on an employer-developed MSDS:

1. An ingredient identified as being hazardous under the whmis criteria,
2. An ingredient included on the ingredient disclosure list established by the hazardous products act
3. An ingredient that the employer has reasonable grounds to believe may be harmful, or
4. An ingredient whose toxicological properties are not known.

Employee Responsibility

Whatever the obligation of the employer, the employee also has a duty to comply with all preventative actions identified.

If they work in conditions which carry the risk of occupational dermatitis, it is their duty to follow correct operating procedures, to wear the right protective clothing at all times and to make full and careful use of the washing facilities provided. After all, it is their skin that will suffer if they do not.

First aid treatment should be obtained for every injury, however minor and the wound protected by a suitable dressing.

Signs of skin problems of any kind should be reported to a supervisor, health and safety representative, or the factory doctor or nurse if available, at once. This individual should investigate the situation and then take the appropriate action. Anyone who has any concerns about their skin condition, whether work related or not, should contact their family doctor.

Early advice and treatment may prevent a case becoming serious and lessen the likelihood of a long spell off work. It may also reduce the chance of the disease recurring.

Useful official leaflets, posters and other documentation are available from the Workplace Safety & Prevention Services website (http://www.wsps.ca/Information-Resources/Topics/Occupational-Hygiene.aspx).
As with other health and safety aspects, conducting an initial assessment is critical. Hazards should be identified and from these the risks to the skin should be assessed to clearly identify the potential impact on employees.

It is important to consider individuals when assessing risks to the skin, as some employees may be more susceptible to occupational dermatitis. Here, individual personnel records should be called upon for more detailed and specific knowledge.

There are many substances that employees can come into direct contact with in their everyday work. It is particularly important to remember that not all skin irritants and sensitizers are those which would first spring to mind.

Many irritants come from chemical based products which are often simply seen as ‘branded’ products and not perceived as a potential hazard. Problems can even occur when mis-using those very products that are designed to care for the skin.

### HOW DO I RECOGNIZE HAZARDOUS SUBSTANCES?

Suppliers are required by law to identify the hazards of the chemicals and products they provide via labelling of packs and provision of a Safety Data Sheet to professional users. The warning signs and risk/safety phrases (hazard and precautionary statements) on the container and the safety data sheet will help you to identify chemicals causing harm to the skin.

Before using a chemical, always read the label on the container and consult the safety data sheet. If in doubt, contact your supplier.
Effective prevention of occupational dermatitis requires full co-operation between all involved, management and employees alike. Once the initial risk assessment has been carried out, it is essential to put in place appropriate procedures and practices to protect all those at potential risk. These will vary depending on the nature of the business, however, risks should be minimized or removed where feasible.

**Eliminate Or Substitute Where Possible**
Whenever a substance in use, or there is a known risk in the working environment, every effort should be made either to eliminate it or to provide a safe alternative (by using an alternative process).

**Safe Working Distance**
If elimination or substitution is not possible, a safe working distance (SWD) is an essential approach to reduce dermal exposure. The following actions should be considered:

- Control exposure by use of engineering controls such as automated handling, complete enclosure of the process, or local exhaust ventilation when dust, fumes or vapours are identified as a potential risk.
- Use of screens and splash guards when dealing with liquids
- Use of mechanical aids such as tongs, rakes or other long handled tools to avoid immersion of hands in chemicals and/or water.

**Personal Protective Equipment & Skin Care**
In situations where the procedures and practices above cannot adequately control dermal exposure, PPE and skin care should be used to aid skin protection:

- Use suitable protective gloves where necessary (bearing in mind the use of gloves is not always appropriate due to loss of dexterity or the risk of them getting caught in machinery)
- Ensure that hands are washed and dried regularly, including before and after wearing protective gloves.
- Use pre-work and after-work creams to ensure good skin condition.

Choosing the right glove is essential as a poor quality, or inappropriate glove, could be more damaging than none at all. Advice should be sought from a reputable glove manufacturer or supplier. It is important to remember that despite advances made to enhance comfort, non-fabric gloves (e.g. latex, PVC, neoprene etc) are not ventilated and can themselves cause irritation.

A comprehensive guide to skin care management starts on page 8 of this guide.
**Good Housekeeping**

Working areas should be kept clean, any dust and solid debris being removed regularly and spillages from machines, storage tanks and other equipment being quickly cleared up. In workshops where cutting oils are being circulated, they should be maintained according to the manufacturers’ instructions. Care should be taken to remove all the swarf they contain, as very fine metal particles often cause slight abrasions which may initiate dermatitis. Many synthetic resins can also be harmful. People using these should keep appropriate hand cleaners nearby as, once the resins have hardened, they are extremely difficult to remove.

**Awareness & Training**

Make sure that staff are aware of the risks and their responsibilities by displaying health and safety information, such as the posters available from the HSE website, or available from skin care manufacturers.

Ensure that employees are correctly trained in any processes/ changes to processes, or the use of any PPE or skin care products.

It is vitally important that businesses not only look at the processes and procedures, but also consider the individuals who are part of these processes. Here it is important to remember that not all employees will be affected in the same way.
Introducing a 6 Step Skin Care Management System

Where it is not possible to protect the skin against workplace contaminants or PPE cannot provide sufficient skin protection, cleaning and taking care of the hands is an important part of developing a proactive, holistic stance against work related skin disorders.

As such, a 4-Step Skin Care Product System should be adopted to:

- **Protect**
- **Cleanse**
- **Sanitize**
- **Restore**

This should be supported by 2 important support steps:

- **Educate**: staff training and communication to increase awareness and encourage compliance
- **Audit**: ongoing monitoring and review of skin care

A Skin Care Management System will be specific to every company. However, the principles can be applied across all business sectors and industries alike. The system takes into account a variety of factors looking at a complete, holistic approach to the effects on skin from the working environment.

Products should always be sourced from a reputable company who offer advice and guidance on the use of their products. The installation of specially designed, sealed cartridge dispensers for use with soaps, skin cleansers and creams is strongly recommended.

These dispensers provide the most hygienic skin care system, by reducing to a minimum the risk of cross-infection that can occur if a number of people extract the product from an open or communal container. In addition, dispensers ensure the correct amount of product is used, minimize waste and optimize cost in use; they can also be permanently sited where they are needed the most.

It is important that products are not only effective (and supported with test data where appropriate) but that they are also pleasant to use, as this encourages compliance, a critical element to help prevent occupational dermatitis.
Purpose
If skin contact with an irritant is unavoidable, then the use of protective pre-work creams may be of assistance. The aim of pre-work cream is to:

• Help protect the skin against moderately irritant substances
• Provide a second line of defence under gloves
• Make hands easier to clean: this allows for mildest possible cleansers to be used and makes hand cleaning faster

Pre-work cream should be made available to workers whose skin is exposed to hazardous substances. Pre-work cream should be applied to the skin at least before each work session and should be of a type that provides protection against the particular irritants encountered. Choice of the correct cream is important and may require specialist advice, since with some substances, creams have been known to promote absorption, instead of hindering it.

Application
When applying a pre-work cream, particular attention should be paid to the backs of hands, thumbs, finger tips and around wrists. In addition, other exposed parts of the body, such as the neck and face may also require the application of cream. Remember, only a small amount of pre-work cream is required - too much and the skin will be left greasy which can affect the handling of tools, discouraging ongoing use and compliance.

The cream should be washed off after each work session and applied afresh after breaks and meals to provide continuous protection. Also, if visiting the toilet during a work session, after washing the hands, pre-work cream should be re-applied. The skin should be clean and dry before the cream is applied.

Location
To help maximise compliance, pre-work creams should be located in dispensers in washrooms, at the entrance to and within work areas.

USE OF PRE WORK CREAMS
It is recommended that employees are given advice on the correct application of pre-work creams to ensure appropriate compliance.

The availability of pre-work creams should not be used as a reason for ignoring any of the other preventative measures already described. Pre-work creams are NOT invisible gloves.
Step 2: Cleanse

**Purpose**
Proper cleaning of the hands is essential to remove the contaminants which can cause occupational dermatitis.

Removing all dirt and contaminants from the skin at the end of a day and during work breaks, is extremely important. The employee should take full advantage of the washing and cleansing facilities provided. To obtain the maximum protection against dermatitis, the correct use of cleansers or soap is necessary.

Thorough rinsing in running water and drying properly to avoid chapping [especially during cold weather] will help to reduce further the incidence of dermatitis. Hand driers or clean towels should be available at all times - dirty towels mean exposing the skin to more dirt and the risk of infection. Ideally, ‘single issue’ disposable towels should be used, as the use of ‘communal’ towels can lead to cross-contamination.

Employers are also required to provide facilities for employees to change in to work wear and store outer clothing. In some industries it is a legal requirement for employers to provide showers in addition to hand washing facilities.

Often over-looked is the need to clean hands after wearing protective gloves. Irritants can get on to the skin, even under gloves, plus the process of removing them can lead to the skin becoming further contaminated.

Workers should wash their hands before and after eating, drinking, smoking, using the lavatory or applying cosmetics.

**WHEN TO WASH HANDS**

| Hands and other soiled parts of the body should be cleaned at least at the end of each work period, prior to breaks, and before and after visiting the toilet. Particular attention should be paid to the backs of hands and around the finger-tips. |

**Choosing an appropriate soap or cleanser**
The correct method of cleaning the skin is also important. Washing with soap and water is the most familiar way of removing dirt and grime and provided the skin is not heavily soiled, it is a very effective method. However, choice of the correct soap is important. A good quality soap, that gives a good lather with the particular water supply, will provide safe and often adequate cleansing. The installation of specially designed, sealed cartridge dispensers is strongly recommended to optimize hygiene standards, cost in use and to deliver a measured dose hand wash every time. Use of bar soap is not recommended due to risk of cross-contamination.

The mildest hand cleanser possible should be used to remove a specific contaminant. Use of a pre-work cream may facilitate the use of a lighter hand cleanser. The recommended dose should also be adhered to, as excessive use may also cause problems.
Choosing an appropriate soap or cleanser (continued)

Some of the cheaper soaps and substitutes, such as domestic detergents, can be too harsh on the skin. Moreover, deeply ingrained dirt and water-repellent substances like paint, tar etc, will not be easily removed by soap.

The use of solvents such as paraffin, thinners, petrol and white spirit, should not be used to clean hands. They are likely to remove too much of the skin’s natural oils, making it more susceptible to other irritants and sensitizers and they can themselves cause dermatitis.

Similarly, coarse abrasives such as pumice or sand should not be used to give a deeper clean as these will damage the outer surface of the skin and could lead to skin problems. Special skin cleansers should be used where deeply ingrained soilings are encountered. These carefully blended compounds allow the safe and effective removal of dirt and irritants without upsetting the structure of the skin or its functions. Choose products with natural scrubbing agents such as cornmeal. Their use will help to control dermatitis by keeping the skin in a healthy condition.

Also, as with creams, it is recommended that products are chosen where there is supplementary test data available to verify the manufacturers’ claims. All cleansers used should be dermatologically tested to provide reassurance of skin compatibility. In addition, the use of cleansers that have been proven to have no negative impact on the skin’s natural barrier function is recommended.

Application

Soaps and hand cleansers should be applied according to manufacturers’ guidelines. Some have been developed for application prior to wetting the hands. In this instance there can be potential water savings for the business, as application of certain soaps prior to wetting has been proven to save water. The suitable handwashing technique for industrial locations is detailed to the right:

Location

At large or remote sites washroom facilities may not be conveniently located. In these situations, local wash stations should be provided, or moist wipes specifically developed for skin cleansing should be used.

CLEAN CLOTHING

Cleaning does not just apply to the skin. Protective clothing should also be washed frequently and inspected regularly for holes or worn areas. It is a waste of time washing the skin thoroughly if it is going to be covered for several hours by a dirty overall. This is especially important for people working with mineral oils which can be absorbed into clothing. Of particular importance is gloves as, in general, these do not last very long.
Purpose
Germs and bacteria that cause common illnesses are invisible to the naked eye. In a busy working environment or public facility these germs and bacteria can quickly and easily spread by person to person contact and through touching everyday surfaces.

Enclosed environments where people are working or interacting in close proximity with one another are particularly prone to the spread of germs. Hands are the primary vehicle to increase the spread of germs, therefore appropriate facilities for hand hygiene should be placed around the workplace as well as in the washroom. Germs can then be removed from the hands where and when appropriate. Hand sanitizers for use without water should be easily accessible around the workplace.

Application
The use of hand sanitizers is recommended where there is no immediate access to soap and water, to allow employees and visitors to kill germs and bacteria on their hands prior to eating, starting work or going home and after visiting the toilet, coughing, sneezing or touching ‘hotspots’ i.e. surfaces that are likely to be heavily contaminated with germs or bacteria.

Choose a hand sanitizer with the highest kill rate possible for maximum effectiveness. Research has demonstrated a clear user preference for a foam formulation hand sanitizer and that foam is more effective than a gel formulation.

It is recommended that products are chosen where there is supplementary test data available to verify the manufacturers’ claims. All products should be dermatologically tested to provide reassurance of skin compatibility, and should not induce antibacterial resistance. [Food ‘safe’, non-tainting sanitizer formulations will be required for extra reassurance in food manufacturing, food preparation or food service environments].

Location
Use hand sanitizer at ‘germ hotspots’ such as:
• Hot desking areas
• Communal and shared resource centres
• Cafeteria and restaurant areas
• Touch screens
• Elevator buttons
Also issue to mobile workers.

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Hand Sanitizer

The World Health Organization recommends the use of an alcohol based hand sanitizer where there is no access to soap and water for hand washing.
Purpose
An after-work conditioning cream should be applied at lunch breaks and the end of each working day as a minimum. Regular use can help maintain the skin in a healthy condition. These creams help to replenish any lost natural oils, keep the skin soft and supple and avoid dryness. Indeed dermatologists recognize the importance of doing so:

“These creams appear to confer some degree of protection against irritant contact dermatitis. They should be encouraged and made available in the workplace” [Dr John S.C. English, ‘A Colour Handbook of Occupational Dermatology’].

After-work cream should be made available to workers whose skin is exposed to hazardous substances.

In addition, some people’s skin is more prone to being sore, chapped and dry, plus certain work environments increase the risk of these conditions, so ‘super-hydrating’ skin conditioning creams may be required. Advice should be taken as required.

Application
When applying an after-work cream, particular attention should be paid to the backs of hands, thumbs, finger tips, in between fingers and around wrists. In addition, other exposed parts of the body, such as the neck and face may also require the application of cream. Only a small amount of after-work cream is required - too much and the skin will be left greasy which can discourage ongoing use and compliance.

When using after-work creams it is also recommended that products are chosen where there is supplementary test data available to verify the manufacturers’ claims. Proof should be requested of the conditioning effect claimed. Also, all creams used should be dermatologically tested to provide reassurance of skin compatibility.

Location
After work creams should be located in washrooms, changing rooms and at work exits as appropriate.
PROTECT
Pre-work cream
Specific attention should also be given to those who work outdoors. Of particular importance is providing protection against adverse weather conditions. The use of appropriate pre-work creams can help protect the skin in both cold and hot conditions. In cold conditions, exposed skin can become sore and chapped leaving it vulnerable to damage from irritants and sensitizers. This will be in addition to the discomfort that will be felt by the skin being in this condition.

In addition, some outdoor workers, particularly in the agricultural, water, sewage and construction industries are likely to come into contact with water which could have been contaminated by urine from rats, a known source of Weil’s disease.

With this disease, the organism enters the body through the skin, which can lead to severe illness and even be fatal, the risk can be reduced by applying appropriate skin care procedures.

Firstly, where possible, contact with dirty, contaminated water should be avoided by adopting appropriate procedures and wearing protective clothing. Where contact cannot be avoided, or to provide complementary protection, special pre-work creams should be applied in the manner as prescribed earlier. These creams will be specifically formulated to provide protection against water and contain anti-bacterial agents to help protect against harmful germs that the skin could be exposed to. Appropriate test data should be available to prove the product’s effectiveness.

Sun Protection
Over the mid-year period, outdoor and mobile workers must be protected from the risks posed by the sun. For more information, please refer to the Deb publication “Skin Care at Work: Sun Protection for Outdoor Workers – A Manager’s Guide”– http://events.debgroup.com/sun-awareness-protection-for-outdoor-workers-ca.

CLEANSE
For outside sites, where no piped water supply is available or access to water is limited, special skin cleansers formulated for use without water or moist wipes specifically developed for skin cleansing should be used. The skin should then be washed with soap and water at the next convenient opportunity.

SANITIZE
The use of a tested and proven skin sanitizer for use immediately after contact with potentially contaminated water, to disinfect the skin, is recommended. This will help to kill any potentially harmful germs on the hands. The manufacturers’ instructions should always be followed when using these products.
Skin Care Management System: Support Steps

Education
Developing a Skin Care Management System is so much more than simply putting the right products in the right places. The system only works when it has the ‘buy in’ from the whole workforce. Management and Health and Safety Officers have the responsibility to ensure all staff are sufficiently aware and trained to understand the need for a 6-step approach and how to apply it. Compliance is the absolute key to success.

The workforce need to be informed of the dangers of ignoring skin safety. Visibility of the system needs to be high. It must be simple and attractive for the workforce to engage in the Skin Care Management System. This is where choosing the right products, with the right back up service, is vital. Systems which incorporate colour coding for different skin care steps help to reinforce the different products and aide product selection.

Training sessions, instructional multimedia programmes, safety signs, personal issue cards and posters are an effective way of getting the workforce to ‘buy into’ and support the concept of a Skin Care Management System.

Audit
Once a Skin Care Management System has been introduced, it is also necessary that its effectiveness is monitored and reviewed. This could take the form of regular, recorded one-to-one reviews with staff, if considered necessary, to evaluate their skin condition and compliance with the ‘system’. Records should be kept and reviews should take into account changes in work practices and any changes in an individual’s circumstance.

For large organizations, skin care manufacturers may provide an annual audit service, to ensure that all skin care dispensers are working effectively and to review opportunities to improve compliance through dispenser placement and products review.
Summary Checklist

Occupational dermatitis, like an accident, does not just happen, it is caused. To minimize the risk, implement a Skin Care Management System:

• Conduct a thorough initial assessment to identify risks to the skin
• Wherever possible, substitute products labelled as irritant, corrosive, harmful, toxic or very toxic with alternatives
• Where substitution is not possible keep a safe working distance: minimize skin contact with oils, chemicals, resins, etc. by introducing tools, equipment, protective clothing
• Introduce appropriate procedures and processes to minimize risks
• Make sure that clothing and equipment is washed or cleaned frequently and is free from holes or other defects
• Provide training on how to remove soiled gloves without contaminating the skin
• Ensure skin care products are used throughout the day, as recommended
• Ideally, products should always be used with dispensers for maximum hygiene and to minimize wastage
• Ensure an effective 4-step skin care product routine to protect, cleanse, sanitize and restore, is followed
• Always ensure products are pleasant and easy to use to encourage compliance
• Provide appropriate pre-work protection cream, whether for indoor or outdoor work
• Provide appropriate, effective and safe hand cleaners
• Where possible, hands should be thoroughly rinsed with clean water
• Hands should be dried completely
• Provide appropriate after-work cream
• Ensure any skin disorder is reported to the Works Doctor or Family Doctor
• Provide training and communication to encourage compliance
• Monitor and review
For over 65 years, the Deb Group has been developing and manufacturing skin care and hand hygiene products and dispensers in the North America, for all types of workplace and public environments, spanning industrial, commercial, automotive, healthcare and food sectors.

Globally, Deb Group comprises a total of 22 sales and marketing and manufacturing companies operating in 18 countries and we estimate that over 40 million people use our products everyday.

As the a leading manufacturer and provider of a 6-Step Skin Care Management System, Deb provides the knowledge and expertise to help employers implement an effective Skin Care Management System and enable them to manage the process themselves, simply and cost effectively through a step by step approach. Deb users are supported nationwide by a field based team.

Deb is a global innovator of skin care products and technologies, providing solutions to workplaces and public facilities for over 65 years.
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