

Nickel and you

Working with nickel – are you at risk?

Introduction

Working with nickel and its compounds may affect your health. This leaflet tells you about the possible health effects, the preventative measures your employer needs to apply, and the precautions you should take.

Not all forms of nickel present the same dangers – this leaflet will help you identify the specific hazards from the nickel in your workplace.

What is nickel?

Nickel is a silvery-grey metal. It is used mainly:

- in alloys with other metals;
- as its compounds, which are often a bright green colour.

Where is it found?

Nickel can be found in:

- alloys, particularly nickel/copper and nickel/chromium, in the manufacture of stainless steel, coins, magnets, chemical and food process equipment, and in the aerospace industry;
- polishing or other processes on stainless steel and nickel alloy articles;
- the welding of nickel and alloys and when using welding rods containing nickel;
- the electroplating industry;
- pigments for paint, pottery, glass and plastics;
- catalysts in the chemical industry.

How can it get into your body?

Nickel can enter the body:

- by breathing in dust, fumes or mist containing nickel;
- by skin contact with dust or solutions containing nickel.

What are the health hazards?

The toxicity of nickel metal and inorganic nickel compounds vary, depending on their solubility (how easily they dissolve). However, general short-term effects can include:

- irritation of the skin on contact with solutions of soluble nickel salts;
- eye irritation from exposure to nickel dust, fumes, or splashes from nickel-containing solutions.

Longer-term effects can include:

- allergic reactions in the skin and respiratory tract and asthma;
- inflammation of the lungs;
- cancer of the lung and nose, particularly the sinuses.

What does your employer have to do?

The Control of Substances Hazardous to Health (COSHH) Regulations 2002 require your employer to:

- assess the risks to your health and the precautions needed for your protection;
- prevent you being exposed to nickel and its compounds, or where this cannot reasonably be done, adequately control your exposure;
- maintain all fume and dust controls in efficient working order;
- provide fit testing of any tight-fitting respirators;
- find out how much nickel you are exposed to, normally through a monitoring programme, and tell you the results;
- arrange any health checks that are necessary;
- inform, instruct and train all employees who may be exposed to nickel;
- reduce your exposure to airborne nickel and its compounds so far as reasonably practicable, and in any case below the workplace exposure limits (WELs) assigned for nickel and its compounds as follows:
 - nickel and its water-insoluble compounds – 0.5 milligrams per cubic metre of air averaged over an 8-hour period;
 - water-soluble nickel compounds – 0.1 milligrams per cubic metre of air averaged over an 8-hour period.

An explanation of what 'reasonably practicable' means is provided at www.hse.gov.uk/risk/faqs/htm.

What should you do?

- Use the extraction equipment or other control measures correctly.
- Use the protective clothing and equipment provided.
- Always use the washing facilities provided, which should be adequate and suitable for your needs.
- If you have to wear a respirator make sure:
 - it fits properly;
 - if it is a tight-fitting mask, that you have been fit tested and are clean shaven;
 - it is clean and in good working order;
 - the filter is changed regularly;
 - it is stored in a clean/dry place, preferably a locker.
- Report defects in enclosures, extraction equipment or other control measures to your employers.
- Don't eat or drink in work areas where nickel may be present.

What about health checks?

The health of people exposed to nickel and its compounds should be monitored by an occupational health professional:

- They will normally carry out an examination after an offer of employment and will see you at regular intervals during your employment. You will be asked to provide a urine sample so its nickel content can be measured.
- You should examine your skin regularly, looking for colour changes, rashes and skin damage. The occupational health professional will give you advice.
- If additional examination or tests are needed, the occupational health professional will explain.

What information can you get?

Your employer should tell you about:

- the risks to health from the use of nickel;
- the safe way of working, the reasons for it, and how to use equipment properly, eg extraction systems;
- the reasons for personal protective equipment and clothing, the jobs where they are necessary, and how they should be used, stored and maintained;
- the results of any tests for nickel levels in the air of your workplace;
- the role of any health surveillance and arrangements for you to know the results;
- any further requirements of the COSHH Regulations.

If you have any worries or problems about working with nickel or its compounds, ask your supervisor or safety representative to discuss them with your employer, or discuss them with the occupational health professional.

Need to know more?

Hazardous substances at work: A brief guide to COSHH Leaflet INDG136(rev5)
HSE Books 2012 www.hse.gov.uk/pubns/indg.136.htm

Further information

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit www.hse.gov.uk/. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.

This leaflet is available at: www.hse.gov.uk/pubns/indg351.htm.

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