

# Cobalt and you

## Working with cobalt – are you at risk?

### Introduction

This leaflet is aimed at people who work with cobalt. Working with cobalt and its compounds may affect your health. The leaflet tells you about the possible health effects, the preventative measures your employer needs to apply and the precautions you should take.

### What is cobalt?

Cobalt is a hard, bluish-white metal. At high temperatures, it is attacked by atmospheric oxygen and by water vapour, producing cobalt (II) oxide. Cobalt (II) oxide is an olive-green compound. Simple inorganic salts of cobalt are normally very soluble in water (they dissolve very easily).

### Where is it found?

Cobalt and its compounds are used in many processes and products. They are used in:

- the hard metal industry;
- specialist alloy foundries;
- cobalt refineries;
- manufacturing cobalt pigments;
- chemical factories;
- manufacturing magnets;
- pigments in pottery, glass, ceramics and paints;
- diamond tooling.

### How can it get into your body?

Cobalt can get into your body:

- by breathing in dusts/mists containing cobalt;
- by skin contact with dust or solutions containing cobalt;
- by swallowing it, through handling food when you have cobalt or its compounds on your hands.

### What are the health hazards?

Short-term effects can include vomiting and abdominal pain if cobalt salts are ingested.

Longer-term effects can include:

- allergic reactions in the skin (allergic dermatitis) and respiratory tract (asthma);
- inflammation and fibrosis of the lung, in a condition called 'hard metal disease', which can become irreversible and lead to early death;
- occasional instances of heart disease (cardiomyopathy);
- a possible effect on thyroid function, with enlargement of the thyroid gland.

Based on experimental animal data, there can also be concerns that:

- repeated exposure to cobalt compounds may cause cancer (particularly of the lungs). This has not been proven to occur in humans, but employers are required to handle cobalt and its compounds as if they can cause cancer;
- there could be potential effects on male fertility.

### **What does your employer have to do?**

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

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

### **What does 'reasonably practicable' mean?**

An explanation of what 'reasonably practicable' means is provided at [www.hse.gov.uk/risk/faqs/htm](http://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 cobalt or cobalt compounds may be present.

### **What about health checks?**

The health of people exposed to cobalt 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 cobalt 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 cobalt and its compounds;
- 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 needed, and how they should be used, stored and maintained;
- the results of any tests for cobalt 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 COSHH.

If you have any worries or problems about working with cobalt 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/indg136.htm](http://www.hse.gov.uk/pubns/indg136.htm)

### **Further information**

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit [www.hse.gov.uk/](http://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/indg442.htm](http://www.hse.gov.uk/pubns/indg442.htm).

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