

The Control of Substances Hazardous to Health (COSHH) Regulations in the context of historic chemical collections

Larry Carr
Collections Hazards Officer



Outline of presentation

- About COSHH
- The challenge
- Getting started
- The activity
- Outcomes
- Next steps
- Useful resources



COSHH in the context of historic chemistry collections
Larry Carr

SHARE: 'Getting in the Corners' Conference, Hughes Hall, Cambridge 21 January 2015

About COSHH

- Control of Substances Hazardous to Health
- To protect employees and other persons who may be exposed to substances hazardous to health
- Safe 'use' of hazardous substances
- Recommended to always seek expert advice on how to interpret COSHH for your workplace



COSHH in the context of historic chemistry collections
Larry Carr

SHARE: 'Getting in the Corners' Conference, Hughes Hall, Cambridge 21 January 2015

COSHH Eight Principles of Good Practice

COSHH Regulations 2002, Schedule 2A

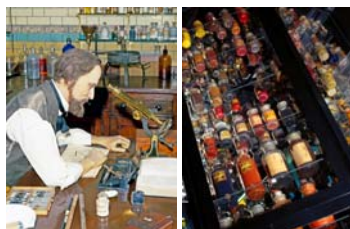
- **Minimise emission, release and spread** of substances hazardous to health
- Take into account all relevant **routes of exposure**
- Control exposure by measures that are **proportionate** to the health risk
- Choose the most **effective and reliable** control options
- Where adequate control of exposure cannot be achieved by other means, provide, in combination with other control measures, suitable **PPE**
- Check and **review** regularly control measures for their continuing effectiveness
- **Inform and train employees** on the hazards and risks and the use of controls
- Ensure that the introduction of **new control measures** does not increase the risk

COSHH in the context of historic chemistry collections
Larry Carr

SHARE: 'Getting in the Corners' Conference, Hughes Hall, Cambridge 21 January 2015

The challenge

- Improve documentation, storage, safety and access to c.800 C19th & C20th laboratory chemicals
- Segregated; uncertain contents and condition
- Expert curatorial input for rationalization



COSHH in the context of historic chemistry collections
Larry Carr

SHARE: 'Getting in the Corners' Conference, Hughes Hall, Cambridge 21 January 2015

Getting started

- *Maintain a collection of hazardous chemicals that has both historical interest and significance, and can be safely managed*
- Criteria & priority for what objects are worth retaining in curator's opinion
- Criteria for the scope of the planned activity



COSHH in the context of historic chemistry collections
Larry Carr

SHARE: 'Getting in the Corners' Conference, Hughes Hall, Cambridge 21 January 2015

COSHH Banding

The technical basis for COSHH essentials: Easy steps to control chemicals, HSE, 2009

- By Hazard:
 - A. Skin / eye Irritant
 - B. Harmful
 - C. Severe irritant, Toxic
 - D. Very toxic, harmful to reproduction
 - E. Cancer, genetic damage, asthmagens, sensitizer
- By Quantity:
 - A. Small (grams / millilitres)
 - B. Medium (kilograms / litres)
 - C. Large (tons / cubic metres)
- Concentration in air...
- Form (dustiness / volatility)...
- Type of Activity / Process...



COSHH in the context of historic chemistry collections
Larry Carr

SHARE: 'Getting in the Corners' Conference, Hughes Hall, Cambridge 21 January 2015



Getting started

- Written activity risk assessment and method statement to plan the activity in detail:
 - General, foreseeable substance hazards
 - Type, location, duration, frequency of work
 - Work equipment
 - Personal Protective Equipment
 - Contingency



COSHH in the context of historic chemistry collections
Larry Carr

SHARE: 'Getting in the Corners' Conference, Hughes Hall, Cambridge 21 January 2015



The activity

- Method:
 - Cautious; seek advice
 - Visual examination
 - ID substance and hazards
 - Limited handling: photograph, weigh, document & record, re-package, sort



COSHH in the context of historic chemistry collections
Larry Carr

SHARE: 'Getting in the Corners' Conference, Hughes Hall, Cambridge 21 January 2015



COSHH Hierarchy of Control

Working with substances hazardous to health: A brief guide to COSHH, HSE, 2012

- Eliminate or substitute
- Alter the form
- Change the situation
- Contain
- Control
- Limit/Direct
- PPE & RPE
- Dispose of hazard
- Acquire only the packaging
- Store object separately
- Use a secondary container
- Reduce need for handling
- Training & info for staff
- Wear suitable PPE & RPE



COSHH in the context of historic chemistry collections
Larry Carr

SHARE: 'Getting in the Corners' Conference, Hughes Hall, Cambridge 21 January 2015



Outcomes

- How hazardous?
 - Highly Toxic, 1 in 5
 - CMRs, 1 in 6
 - No hazards, 1 in 4
- Asbestos
- Sharps
- Environmental hazards



COSHH in the context of historic chemistry collections
Larry Carr

SHARE: 'Getting in the Corners' Conference, Hughes Hall, Cambridge 21 January 2015



Outcomes

- 2,4-dinitrophenylhydrazine
- Polychlorinated biphenyl
- Pros
 - Expertise of curator
 - Sufficient time and resources
- Cons
 - Excessive packaging
 - Unexpected volume of unwanted material



COSHH in the context of historic chemistry collections
Larry Carr

SHARE: 'Getting in the Corners' Conference, Hughes Hall, Cambridge 21 January 2015



Next steps

- Re-storage to new location:
 - Separate store room
 - Small, good natural ventilation
 - Blackout window
 - Hard surface floor
 - Free racking enclosed on 3 sides (no doors)
 - Spill trays on racking
 - Separate flammable liquids cupboard



COSHH in the context of historic chemistry collections
Larry Carr

SHARE: 'Getting in the Corners' Conference, Hughes Hall, Cambridge 21 January 2015



Next steps

- Disposals (as hazardous waste):
 - Identification
 - Form
 - Quantity
- Training and written work procedures for staff:
 - Handling, storage, transportation, exhibition, loan, acquisition etc.



COSHH in the context of historic chemistry collections
Larry Carr

SHARE: 'Getting in the Corners' Conference, Hughes Hall, Cambridge 21 January 2015



Useful resources

- Training (IOSH Modern COSHH Management, BOHS P304 COSHH Assessment etc.)
- COSHH Essentials:
www.hse.gov.uk/coshh/essentials/
- Chemical dictionaries and encyclopedia (Hawley's, Merck Index etc.)
- Online databases (Haz-Map, ToxNet etc.)
- Safety data sheets (Sigma Aldrich, VWR, etc.)
- Industrial heritage information (Grace's Guide)
- Collections Hazards Wiki?



COSHH in the context of historic chemistry collections
Larry Carr

SHARE: 'Getting in the Corners' Conference, Hughes Hall, Cambridge 21 January 2015

