

Chemical safety and electronics: Industrial technology

This activity is designed to make you aware of the range and types of chemicals used in *Electronics*, their relevant hazard and safe handling procedures.

This material addresses aspects of the following syllabus outcomes:

- 4.1.1 The student identifies and applies fundamental OH&S principles when working with materials, tools and machines
- 5.1.1 The student identifies, assesses and manages the risks and OH&S issues associated with the use of a range of materials, hand tools, machine tools and processes.

Extract from: Stage 4 Industrial Technology Syllabus © Board of Studies NSW 2003.

Chemical safety

The Department of Education and Training (DET) has assessed the risks associated with the use of chemicals in schools and has:





- outlined controls for the use of chemicals in schools
- classified chemicals according to their hazard level
- restricted access to chemicals
- provided risk and safety information for chemicals
- developed procedures and work practices for implementation in schools
- provided training for staff
- provided a Chemical Safety in Schools (CSIS) package.

Chemicals you use in school will have labels indicating the hazard, correct handling, poisons information, flammability and so on.



Each chemical or material must have a material safety data sheet (MSDS) available and the appropriate labelling.

Containers of chemicals will have the safety level indicated with a coloured dot.
 The following table explains these safety levels.

Colour	Safety level
 red	Can only be used by approved teachers for demonstration purposes.
 orange	Can only be used with Years 11–12 students.
 green	Can be used with Years 7–12 students.
 blue	Can be safely used with Years K–12 students.

All materials and chemical substances must be correctly handled as they often have toxic or irritant effects if they are swallowed or come into contact with skin or eyes.

These effects will be minimised with safe handling, following teacher instructions on correct use and wearing personal protective equipment (PPE).



Material safety data sheets (MSDS) for each substance must state the following:

- the name and contact details of the manufacturer/supplier
- ingredients of a product and their proportions
- health effects and first aid instructions
- precautions for use including PPE requirements
- safe handling and storage information and emergency procedures.

Activity

In *Electronics* a number of chemicals are used for soldering and etching circuit boards, such as ferric chloride, flux and even the lead/tin solder itself.

At the Redox Chemical web site <http://msds.redox.com.au/data/FECHLO.htm> you will see the MSDS for ferric chloride or print out the *Word* document: MSDSFerricChloride.doc. Use the information to complete the table below.

Type of contact	Health effects	First aid measures	PPE to use
Swallowed			
Eyes			
Skin			
Inhaled			