How to interpret Safety Data Sheets University Guidance

This document provides guidance on the interpretation of safety data sheets (SDS) information provided by the manufacturer or supplier of the chemical/substance. Safety data sheets may at first seem complicated and difficult to understand, but they contain key information on the properties and recommended control measures for the substance, and, their interpretation is an important part of your risk assessment, allowing you to work with the substance safely.

The data sheet should be arranged into 16 sections and has to provide certain information as prescribed under the REACH regulations. You may find that there are differences in how the information appears, but overall the information has to contain the 16 topic areas.

Important Note – *A safety data sheet does NOT constitute a risk assessment*. It provides information for consideration when carrying out risk assessments. Risk assessment needs to consider all the chemicals used and their interaction, not each chemical in isolation. When referring to a data sheet focus on the headings rather than the section numbers.

1. Identification of substance – gives the substance name and provides details of the company issuing the data sheet with e-mail address and other contact information.
2. Hazards Identification – Provides information on risks to humans and the environment. This gives you the first indication that the product may need to be handled with special control measures in place. It will provide a brief summary of its classification, e.g. Toxic, Under the UN Global Harmonised System (GHS) the classification terms are hazard statements or precautionary statements.
3. Composition and information on ingredients – this section identifies the material, provides it chemical formula and gives the CAS and other registry numbers.

4. First aid measures - Look for any special requirements and ensure you consider this section with sections 6, 7 and 8.
5. Firefighting measures – Where your overall assessment indicates that there could be a residual fire risk, ensure the recommended extinguisher is available for use nearby.
6. Accidental release measures - outlines the procedures to be followed in case of accidental release of the chemical, including methods to be used to clean up spills. Note that these measures are unlikely to be sufficiently detailed if the chemical is particularly hazardous, and local procedures should be drawn up to supplement what is given in the SDS sheet.
7. Handling and Storage – This is self-explanatory and an important section, sometimes overlooked by those using chemicals. It can contain information about the possible formation of peroxides in storage, flammability, explosive risks, etc. Focus attention to the possible need for special handling and storage requirements e.g. work in a fume cupboard, flammable storage cabinets and the need to avoid storage near incompatible chemicals.
8. Exposure controls and personal protection - provides information on regulatory standards for exposure, in other words, the maximum permitted concentration of the material in the environment to which you are allowed to be exposed. It should also provide information on suitable types of PPE (personal protective equipment) and hygiene measures – the usual precautionary good lab practice.
9. Physical and chemical properties - Use this information in relation to the conditions under which you are going to use the chemicals
10. Stability and reactivity - this section is also largely self-explanatory. It provides details of the conditions and materials to avoid. It may refer you to other sections for specific actions.
11. Toxicological information - outlines the risks to which you may be exposed when using the chemical. It is therefore a section of crucial importance! Acute toxicity: (The acute toxicity gives an indication of the kind of quantities of the chemical which may cause immediate damage to health if swallowed, inhaled or absorbed through the skin.) This section also gives details of the health effects which may be attributable to this chemical. This section should be read

particularly carefully, since the range of health effects may be broad, and may include carcinogenic or sensitizer effects. Pay particular attention to any information which may suggest that the chemical is a sensitizer.

12. Ecological information - is largely self-explanatory. General notes: Do not allow substances that could be harmful to the environment or aquatic life to be released to the environment and ensure correct disposal with sustainability considerations.
13. Disposal considerations - this section deals with disposal, is often not sufficiently detailed for you to be able to undertake disposal yourself. If you need to dispose of the chemical after use, ensure that you know how to do this safely and ensure it is captured in your assessment.
14. Transport information - transport information, generally as a list of codes indicating the dangers associated with the chemical (flammable, radioactive, very toxic, etc) and the type of transport which may be used. There are usually UN hazard codes given in this section. A guide is to these is available on the website.
15. Regulatory Information – Indicates the safety symbols and lists the hazard and precautionary statements under GHS. These indicate the principle hazards associated with the chemical and the precautions which should be taken when working with it.
16. Other information – This section can provide a range of additional information, such as the name of the person preparing the data sheet, a list of references from which data have been drawn, disclaimers, explanations of other sections within the data sheet etc.

If you require further assistance with interpreting your SDS or in completing your COSHH risk assessment, please contact your Laboratory Manager, Health and safety Coordinator or University Health and safety Advisor.