4.2 Explain the organization of a Safety Data Sheet (SDS).

The safety data sheets (SDS) follow the format specified by the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). There are **16 sections** that occur in the same order for every SDS. This makes it easy to find the information you need for any hazardous product. The Workplace Hazardous Materials Information System (WHMIS) SDS may be written as a single bilingual document (with both English and French) or two separate unilingual documents.

The SDS must be updated when significant new data is available such as the hazardous product changing classification or the protective measures change. The date of the last revision of the SDS is to be placed in *Section 16 - Other Information*.

It is the supplier's responsibility to update the SDS within 90 days of acquiring the new information. It is the employer's responsibility to ensure that all hazardous products used in the workplace have an up to date SDS and that it is readily available to all workers at the workplace.

The following table shows the 16 sections, their headings and specific information elements that are found in each.

Table 5: Contents of the Safety Data Sheet (SDS) as per *Hazardous Products Regulations*, Schedule 1

Section	Heading	Specific Information Elements
1	**Identification**	• Product identifier (product name) • Other means of identification • Recommended use and restrictions on use • Initial supplier identifier • Emergency telephone number and any restrictions on the use of that number, if applicable
2	**Hazard Identification**	• Classification of the hazardous product, including category and subcategory, if applicable • Label elements: pictogram, signal word, hazard statement and precautionary statement • Other hazards that do not result in classification

3	**Composition / Information on ingredients***	• For a hazardous product that is a material or substance:
		  ○ Chemical name
		  ○ Common name(s)
		  ○ Chemical Abstract Service (CAS) registry number and any unique identifiers
		  ○ Chemical name of impurities, stabilizing solvents and/or additives
		• For a hazardous product that is a mixture, for each material or substance in the mixture:
		  ○ Chemical name
		  ○ Common name(s)
		  ○ CAS registry number and any unique identifiers
		  ○ Concentration

4	**First-Aid measures**	• First aid measures according to the different routes of exposure (inhalation, ingestion, skin and eye contact) • Most important symptoms and effects (acute or delayed) • Indication of immediate medical attention and special treatment needed, if necessary
5	**Fire-fighting measures**	• Suitable and unsuitable extinguishing media • Specific hazards arising from the hazardous product e.g. nature of any combustion products • Special protective equipment and precautions for fire fighters
6	**Accidental release measures**	• Personal precautions, protective equipment and emergency procedures • Methods and materials for containment and clean up
7	**Handling and storage**	• Precautions for safe handling • Conditions for safe storage, including any incompatibilities
8	**Exposure controls / Personal protection**	• Control parameters, including occupation exposure limit values or biological limit values and the source of the values • Appropriate engineering controls • Individual protection measures such as personal protective equipment
9	**Physical and chemical properties**	• Appearance such as physical state and colour • Odour • Odour threshold • pH • Melting point and freezing point • Initial boiling point and boiling range • Flash point • Evaporation rate • Flammability, in the case of solids and gases • Upper and lower flammability or explosive limits • Vapour pressure • Vapour density • Relative density • Solubility • Partition coefficient – n-octanol/water • Auto-ignition temperature • Decomposition temperature • Viscosity
10	**Stability and reactivity**	• Reactivity • Chemical stability • Possibility of hazardous reactions • Conditions to avoid, including static discharge, shock or vibration • Incompatible materials • Hazardous decomposition products

11	**Toxicological information**	• Concise but complete description of the various toxic health effects and the data used to identify those effects including: ○ Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact) ○ Symptoms related to the physical, chemical and toxicological characteristics ○ Delayed and immediate effects and chronic effects from short-term and long-term exposure ○ Numerical measures of toxicity, including ATEs.
12	**Ecological information****	• Ecotoxicity (aquatic and terrestrial, if available) • Persistence and degradability • Bioaccumulative potential • Mobility in soil • Other adverse effects
13	**Disposal considerations****	• Information on safe handling for disposal and methods of disposal including any contaminated packaging
14	**Transport information****	• United Nations (UN) number • UN proper shipping name • Transport hazard class • Packing group • Environmental hazards • Transport in bulk, if applicable • Special precautions in connection with transport or conveyance either within or outside the premises
15	**Regulatory information****	• Safety, health and environmental regulations, made within or outside of Canada, specific to the product
16	**Other information**	• Date of the latest version of the safety data sheet

*Note: Some companies may wish to protect some confidential business information (CBI) such as a chemical identity of one or more trade secret hazardous secret ingredients in a product regulated by WHMIS. In these cases, the company may file a claim for exemption with Health Canada. The review looks at both the SDS and/or label to verify that the hazard and safe use information complies with WHMIS regulations.

**Note: As per the *Hazardous Products Regulations*, sections 12-15 may be omitted in Canada's WHMIS program.

In some cases, it may be appropriate for the supplier to state "not available" or "not applicable" in sections 1 – 11, and 16 instead of supplying specific information.

- **Not available** – the information could not be located or does not exist.
  - E.g. the supplier cannot locate test results for one of the chemical property heading in section 9
- **Not applicable** – the information is not relevant
  - E.g. if the product is odourless, then an odour threshold does not apply