Notes: refer to the conditions for comment stated towards the beginning of the draft standard.

***DR AS 2243.1 Safety In Laboratories – Part 2: Chemical Aspects***

Here I step through the draft standard making comments. Where a comment is answered later in the standard, I go back to my original comment and make notes. An uncommented comment is potentially worthy of becoming an official comment on the standard.

**Section 1**

*1.4.27 protected place*

“Depending on the contect,” should say “Depending on the context,”

*1.4.30 safety data sheet (SDS)*

*Sometime in the last 6 years, Material Safety Data Sheets have potentially been renamed.*

**Section 2**

No notes

**Section 3**

*3.2.8.2 Collection, handling and storage*

States “…handled using suitable containers that are prominently labelled as to the type of waste contained…”

No mention of waste classifications: if the listed divisions in prose are the classifications, convert these to bullets. No description of what prominent means: red texta? Large text? Big sticker?

This is covered in *Section 3.2.8.3 Labelling of laboratory chemical waste* and states that guidelines (not references) are available from the appropriate government agency. Appendix A also provides detail.

*3.2.8.3 Labelling of laboratory chemical waste*

Frist sentence deals with storage, transportation and disposal: “Categories of waste shall be properly segregated for temporary accumulation and storage as well as for the transportation and disposal.” Suggestion: Remove or place in section *3.2.8.2 Collection, handling and storage.*

*3.3.3 Housekeeping*

*Reiterates Part 1 Section 4.1 Requirements for safe conduct*

Typically repeating information is redundant, especially where this standard is intended to be read in conjunction with part 1.

**Section 4**

*4.3 Gases*

Lots of explanation. Little on direction. Especially in *4.3.1 General*.

*Regarding comments I made in Part 1 of the draft standard regarding explanatory content. To provide consistency, such comments should be placed in the general partition of all section and not provided in subsections.*

*4.3.2 Handling of gases. Compresses or liquefied (other than cryogenic liquids)*

For handling of fluorine, direction is given to ask the manufacturer. Presumably this is to obtain the SDS.

Ammonia and Chlorine have their own AS/NA to follow (in addition to the SDS?)

*4.9 Nanotechnology*

*Section 4.9.9 Labelling*

General picky comment: Regarding labelling as “Hazards not fully characterised”, this could be said of all chemicals as nothing has (or can be) fully characterised. This is addressed in *Appendix J.4* and *J.5*

*4.9.11 Personal protective equipment PPE*

*4.9.11.1 General*

Regarding “All PPE shall be removed prior to existing the laboratory.”

Suggestion: Add following statement, “Unless warranted by a Risk Assessment, PPE used when conducting actives using chemicals should be removed before entering a laboratory write up area. This reduces the risk of contamination.

Note, only *Section 4.9* provides specific sections on PPE.

General Nanotechnology comments: It seems the requirements are far in excess of the risk. However, as the consequences are unknown and the risks are unknown, erring on the side of caution is wise.

**Appendix B [informative] The use of absorbent materials and spill kits**

*Public comment is requested on whether this Appendix is still relevant and should be retained, or else deleted.’*

AS 2243.1 references this standard in Section 2.6 Safety Equipment. I recommend appendix B is retained as this information is not provided (in AS/NS) elsewhere.

**Appendix C [normative] Handling of cryogenic fluids**

*Public comment is requested on whether this Appendix is still relevant and should be retained, or else deleted.*

I am not experienced in the handling of cryogenic fluids. However, AS 1894 is referenced in Section 4.3.3 Handling of cryogenic fluids and again in Appendix C. The current version is AS 1894: 1997 The storage and handling of non-flammable cryogenic and refrigerated liquids. This Standard sets out requirements and recommendations for the storage and handling of non-flammable cryogenic liquids at temperatures below -90¦C and refrigerated liquids at or below -15¦C, of Class 2.2, in quantities of at least 50 L water capacity and 50 kPa (gauge) working pressure, up to and including 200 000 L water capacity. It also provides guidelines for temporary installations. This is outside the scope of the information contained within Appendix C.

Standard 1974:1997 does not address the detailed design of vessels or equipment used for the production, transport and storage of cryogenic and refrigerated liquids, nor the precautions and equipment that might be necessary in large-scale production and processing plants. This is also outside the scope of AS 2243.2.

If the information in this standard duplicates the information in Appendix C of *AS 2243.1 Safety In Laboratories – Part 2: Chemical Aspects*, my recommendation is to retain this Appendix. This is due to the normative (and thus prescriptive nature) of this appendix. Alternately, the scope of AS 1894: 1997 could be expanded.

**Appendix D Examples of commonly used highly flammable chemicals**

*Public comment is requested on whether this Appendix is still relevant and should be retained, or else deleted.*

My recommendation is to delete this section. Laboratories are required to risk assess every task and to consult SDS’s for every hazardous chemical in use. SDS’s are updated more frequently than standards. The information in Appendix D is not required.

**Appendix E [informative] Properties associated with commonly used highly reactive chemicals**

My recommendation is to delete this section. Laboratories are required to risk assess every task and to consult SDS’s for every hazardous chemical in use. SDS’s are updated more frequently than standards. The information in Appendix E is not required.

**Appendix F [informative] Properties associated with commonly used hazardous chemicals**

My recommendation is to delete this section. Laboratories are required to risk assess every task and to consult SDS’s for every hazardous chemical in use. SDS’s are updated more frequently than standards. The information in Appendix F is not required.

**Appendix G [informative] Properties associated with commonly used corrosive chemicals**

My recommendation is to delete this section. Laboratories are required to risk assess every task and to consult SDS’s for every hazardous chemical in use. SDS’s are updated more frequently than standards. The information in Appendix G is not required.

**Appendix H [informative] Properties associated with commonly used unstable substances**

My recommendation is to delete this section. Laboratories are required to risk assess every task and to consult SDS’s for every hazardous chemical in use. SDS’s are updated more frequently than standards. The information in Appendix H is not required.

**Appendix I [informative] Properties associated with the use of perchloric acid**

My recommendation is to delete this section. Laboratories are required to risk assess every task and to consult SDS’s for every hazardous chemical in use. SDS’s are updated more frequently than standards. The information in Appendix I is not required.

**Appendix K (normative) ADG class and packaging group, and equivalent GHS class**

Based on the brevity of this appendix, I recommend it be placed in Section 4.1 in place of the NOTE referencing this appendix.