



UNIVERSITY of
TASMANIA

Hazardous Chemicals, Dangerous Goods and Explosives Storage and Transport Procedure

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|--|---|
| Related Policy | <i>Work Health and Safety Policy</i> |
| Responsible Officer | Executive Director – Human Resources |
| Approved by | Executive Director – Human Resources |
| Approved and commenced | December, 2014 |
| Review by | December, 2017 |
| Responsible Organisational Unit | Work Health and Safety Unit – Human Resources |

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1 Objective

The objective of this Procedure is to support the University's management of licenced quantities of hazardous chemicals and the keeping and transport of dangerous goods and explosives in accordance with legislative requirements.

2 Scope

This Procedure applies to all University owned or controlled workplaces where licenced quantities of hazardous chemicals, dangerous goods and explosives are held and to the transport of dangerous goods and explosives by, or on behalf of, the University.

3 Legislation

The following legislation is applicable to this Procedure:

- *Work Health and Safety Regulations 2012;*
- *Dangerous Goods (Road and Rail Transport) Act 2010;*
- *Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code);*
- *Explosives Act 2012;*
- *Explosives Regulations 2012.*

4 Procedure

4.1 Hazardous Chemicals

The Organisational Unit head or delegate is to:

- keep a manifest of hazardous chemicals held, see *Appendix 1: Placard and Manifest Quantities* for further guidance;
- monitor the quantities of hazardous chemicals present, or likely to be present, at the workplace to ensure they do not exceed 10% of their threshold quantity and so do not meet the requirements for a Major Hazard Facility (MHF), see *Appendix 2 Schedule 15 - Hazardous Chemicals at Major Hazard Facilities (and their Threshold Quantity)* for further guidance;
- advise the WHS Unit should hazardous chemicals be used, handled or stored at or above the prescribed threshold quantities.

Where advised that the quantities of hazardous chemicals present, or likely to be present, exceed 10% of their threshold quantity in accordance with the *WHS Regulations* (536 – 549) and Schedule 15 of the Regulations, the WHS Unit is to:

- notify the Regulator, Worksafe Tasmania.

In the event that chemicals are used, handled or stored at or above the prescribed threshold quantities, the head of the Organisational Unit or delegate is to:

- ensure that the Duties of Operators of Determined Major Hazard Facilities (550 – 608) are complied with.

Further guidance on storage and handling of hazardous chemicals is provided through:

- *AS 1940 The storage and handling of flammable and combustible liquids;*
- *AS/NZS 3833 The storage and handling of mixed classes of dangerous goods, in packages and intermediate bulk containers.*

Additional information is available in:

- *Guide For Major Hazard Facilities – Notification and Determination* available through [Safe Work Australia](#)

4.2 Transportation of Dangerous Goods

The University and each Organisational Unit has a responsibility under WHS law to manage the risks arising from all hazardous chemicals, including managing those that are dangerous goods in accordance with the *Dangerous Goods (Road and Rail Transport) Act 2010*.

Most substances and mixtures that are dangerous goods under the ADG Code are also hazardous chemicals.

Transportation of dangerous goods is subject to State and Territory law and based on the requirements contained in the *Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code)*.

The head of the Organisational Unit or delegate is to ensure that both the driver and the vehicle are licenced to transport Dangerous Goods where quantities of dangerous goods transported by road exceed:

- 500 litres or kilograms for a container Class 2-9
- 3000 litres for an IBC (Intermediate Bulk Container for Class 2-9 where not filled or emptied on the vehicle)
- risk category 2 of the Australian Explosives Code for Class 1 (Explosives)

Further information is available from [WorkSafe Tasmania](#)

4.3 Explosives

The head of the Organisational Unit or delegate is to:

- keep a manifest of hazardous chemicals that are explosives;
- ensure compliance with the requirements of the *Explosives Act 2012* and the *Explosives Regulations 2012*.

The WorkSafe Tasmania (WST) website contains information on [Explosives Licencing](#).

5 Definitions and Acronyms

| Term/Acronym | Definition |
|---------------------|--|
| Organisational Unit | College, Faculty, School, Centre, University Institute, other University Entity, Division, Section or University Business Enterprise. |
| ADG | The Australian Dangerous Goods Code sets out the requirements for transporting dangerous goods by road or rail. The current version of the Code is the 7th edition, published in 2007. |
| AS 1940 | The storage and handling of flammable and combustible liquids |
| AS/NZS 3833 | The storage and handling of mixed classes of dangerous goods, in packages and intermediate bulk containers |

SDS Safety Data Sheet

6 Versioning

| | |
|--------------------------|--|
| Former Version(s) | Version 1.1– <i>Dangerous Substances Handling, use and Storage Policy</i> approved October, 2009 by A/Vice Chancellor; |
| Current Version | Version 2 – Hazardous Chemicals, Dangerous Goods and Explosives Storage and Transport Procedure; approved December, 2014 (<i>current document</i>), amended in December 2016 to incorporate Colleges |

7 Appendices

Appendix 1: Placard and Manifest Quantities

Appendix 2: SCHEDULE 15 - Hazardous Chemicals at Major Hazard Facilities (and their Threshold Quantity)

Appendix 1: Placard and Manifest Quantities

The table below shows placard and manifest quantities of hazardous chemicals, as specified in the WHS Regulations (Schedule 11). The final column of this table shows the link between the GHS classes and categories and the equivalent classes and categories of dangerous goods under the ADG Code.

Note: Where the WHS Regulations (Schedule 13) require a placard, the relevant dangerous goods class label (pictogram) must be displayed on the placard, rather than the corresponding GHS pictogram.

| Column 1 | Column 2 | Column 3 | Column 4 | Column 5 | ADG Code Classification |
|----------|---|---|------------------|---------------------|-------------------------|
| Item | Description of hazardous chemical | | Placard quantity | Manifest quantity | |
| | Hazard Class | Hazard Category | | | |
| 1 | Flammable gases | Category 1 | 200L | 5000L | 2.1 |
| 2 | Gases under pressure | with acute toxicity, categories 1, 2, 3 or 4 Note—Category 4 only up to LC ₅₀ of 5000 ppmV | 50L | 500L | 2.3 |
| 3 | | with skin corrosion categories 1A, 1B or 1C | 50L | 500L | 2.3 |
| 4 | | aerosols | 5000L | 10 000L | 2.1 or 2.2 |
| 5 | | not specified elsewhere in this Table | 1000L | 10 000L | 2.2 |
| 6 | | Flammable liquids | Category 1 | 50L | 500L |
| 7 | Category 2 | | 250L | 2500L | 3 (PG II) |
| 8 | Category 3 | | 1000L | 10 000L | 3 (PG III) |
| 9 | Any mix of chemicals from Items 6 – 8 where none of the items exceeds the quantities in columns 4 or 5 on their own | | 1000L | 10 000L | |
| 10 | Category 4 | | 10 000L | 100 000L | Note 3 |
| 11 | Self-reactive substances | Type A | 5kg or 5L | 50kg or 50L | GTDTBT – Note 4 |
| 12 | | Type B | 50kg or 50L | 500kg or 500L | 4.1 (Type B) |
| 13 | | Type C-F | 250kg or 250L | 2500kg or 2500L | 4.1 (Type C-F) |
| 14 | Flammable solids | Category 1 | 250kg | 2500kg | 4.1 (PG II) |
| 15 | | Category 2 | 1000kg | 10 000kg | 4.1 (PG III) |
| 16 | | Any mix of chemicals from Items 12 - 15 where none of the items exceeds the quantities in columns 4 or 5 on their own | 1000kg or 1000L | 10 000kg or 10 000L | |
| 17 | Pyrophoric liquids and Pyrophoric solids | Category 1 | 50kg or 50L | 500kg or 500L | 4.2 (PG I) |

| Column 1 | Column 2 | Column 3 | Column 4 | Column 5 | ADG Code Classification |
|----------|---|---|------------------|---------------------|-------------------------|
| Item | Description of hazardous chemical | | Placard quantity | Manifest quantity | |
| | Hazard Class | Hazard Category | | | |
| 18 | Self heating substances and mixtures | Category 1 | 250kg or 250L | 2500kg or 2500L | 4.2 (PG II) |
| 19 | | Category 2 | 1000kg or 1000L | 10 000kg or 10 000L | 4.2 (PG III) |
| 20 | | Any mix of chemicals from Items 17 - 19 where none of the items exceeds the quantities in columns 4 or 5 on their own | 1000kg or 1000L | 10 000kg or 10 000L | |
| 21 | Substances which in contact with water emit flammable gas | Category 1 | 50kg or 50L | 500kg or 500L | 4.3 (PG I) |
| 22 | | Category 2 | 250kg or 250L | 2500kg or 2500L | 4.3 (PG II) |
| 23 | | Category 3 | 1000kg or 1000L | 10 000kg or 10 000L | 4.3 (PG III) |
| 24 | | Any mix of chemicals from Items 21 - 23 where none of the items exceeds the quantities in columns 4 or 5 on their own | 1000kg or 1000L | 10 000kg or 10 000L | |
| 25 | Oxidising liquids and Oxidising solids | Category 1 | 50kg or 50L | 500kg or 500L | 5.1 (PG I) |
| 26 | | Category 2 | 250kg or 250L | 2500kg or 2500L | 5.1 (PG II) |
| 27 | | Category 3 | 1000kg or 1000L | 10 000kg or 10 000L | 5.1 (PG III) |
| 28 | | Any mix of chemicals from Items 25 - 27 where none of the items exceeds the quantities in columns 4 or 5 on their own | 1000kg or 1000L | 10 000kg or 10 000L | |
| 29 | Organic peroxides | Type A | 5kg or 5L | 50kg or 50L | GTDTBT – Note 4 |
| 30 | | Type B | 50kg or 50L | 500kg or 500L | 5.2 (Type B) |
| 31 | | Type C - F | 250kg or 250L | 2500kg or 2500L | 5.2 (Type C-F) |
| 32 | | Any mix of chemicals from Items 30 and 31 where none of the items exceeds the quantities in columns 4 or 5 on their own | 250kg or 250L | 2500kg or 2500L | |

| Column 1 | Column 2 | Column 3 | Column 4 | Column 5 | ADG Code Classification |
|----------|-----------------------------------|---|------------------|---------------------|-------------------------|
| Item | Description of hazardous chemical | | Placard quantity | Manifest quantity | |
| | Hazard Class | Hazard Category | | | |
| 33 | Acute Toxicity | Category 1 | 50kg or 50L | 500kg or 500L | 6.1 (PG I) – Note 5 |
| 34 | | Category 2 | 250kg or 250L | 2500kg or 2500L | 6.1 (PG II) |
| 35 | | Category 3 | 1000kg or 1000L | 10 000kg or 10 000L | 6.1 (PG III) |
| 36 | | Any mix of chemicals from Items 33 - 35 where none of the items exceeds the quantities in columns 4 or 5 on their own | 1000kg or 1000L | 10 000kg or 10 000L | |
| 37 | Skin corrosion | Category 1A | 50kg or 50L | 500kg or 500L | 8 (PG I) |
| 38 | | Category 1B | 250kg or 250L | 2500kg or 2500L | 8 (PG II) |
| 39 | | Category 1C | 1000kg or 1000L | 10 000kg or 10 000L | 8 (PG III) |
| 40 | Corrosive to metals | Category 1 | 1000kg or 1000L | 10 000kg or 10 000L | 8 (PG III) |
| 41 | | Any mix of chemicals from Items 37 - 40 where none of the items exceeds the quantities in columns 4 or 5 on their own | 1000kg or 1000L | 10 000kg or 10 000L | |
| 42 | Unstable explosives | | 5kg or 5L | 50kg or 50L | GTDTBT – Note 4 |
| 43 | | Any mix of chemicals from Items 11, 29 and 42 where none of the items exceeds the quantities in columns 4 or 5 on their own | 5kg or 5L | 50kg or 50L | |

(1) For the purposes of this table, if a flammable liquid category 4 is used, handled or stored in the same spill compound as one or more flammable liquids of categories 1, 2 or 3, the total quantity of flammable liquids categories 1, 2 or 3 must be determined as if the flammable liquid category 4 had the same classification as the flammable liquid in the spill compound with the lowest flash point.

Example: For placard and manifest purposes, a spill compound containing 1000L of flammable liquid category 1 and 1000L of flammable liquid category 4 is considered to contain 2000L of flammable liquid category 1.

(2) For the item 2 in the table, Gases under pressure with acute toxicity category 4 only applies up to a LC₅₀ of 5000 ppmV. This is equivalent to Division 2.3 dangerous goods under the ADG Code.

(3) Only flammable liquids with a flash point of up to 93°C are classified as hazardous chemicals under the WHS Regulations and the GHS. C1 combustible liquids with flashpoints between 93°C and 150°C are not classified as hazardous workplace chemicals.

(4) GTDTBT means goods too dangerous to be transported.

(5) Division 2.3 under the ADG Code includes gases and vapours classified as acutely toxic (categories 1, 2 and 3) and gases which are corrosive to skin (category 1).

APPENDIX 2: SCHEDULE 15 - Hazardous Chemicals at Major Hazard Facilities (and their Threshold Quantity)

Relevant hazardous chemicals

The hazardous chemicals that characterise a workplace as a facility for the purposes of the *Work Health Safety Regulations* are the chemicals specifically referred to in table 15.1 and chemicals that belong to the types, classes and categories referred to in table 15.2.

Table 15.1

| Item | Hazardous chemical | UN Nos included under name | Threshold quantity (tonnes) |
|------|---|----------------------------|-----------------------------|
| 1. | ACETONE CYANOHYDRIN | 1541 | 20 |
| 2. | ACETYLENE | 1001 | 50 |
| 3. | ACROLEIN | 1092 | 200 |
| 4. | ACRYLONITRILE | 1093 | 200 |
| 5. | ALLYL ALCOHOL | 1098 | 20 |
| 6. | ALLYLAMINE | 2334 | 200 |
| 7. | AMMONIA, ANHYDROUS, LIQUEFIED or AMMONIA SOLUTIONS, relative density less than 0.880 at 15 degrees C in water, with more than 50% ammonia | 1005 | 200 |
| 8. | AMMONIUM NITRATE FERTILISERS | 2067 | 5 000 |
| | | 2068 | |
| | | 2069 | |
| | | 2070 | |
| 9. | AMMONIUM NITRATE, with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance | 1942 | 2 500 |
| 10. | ARSENIC PENTOXIDE, Arsenic (V) Acid and other salts | 1559 | 10 |
| 11. | ARSENIC TRIOXIDE, Arsenious (III) Acid and other salts | 1561 | 0.1 |
| 12. | ARSINE | 2188 | 1.0 |
| 13. | BROMINE or BROMINE SOLUTIONS | 1744 | 100 |
| 14. | CARBON DISULFIDE | 1131 | 200 |
| 15. | CHLORINE | 1017 | 25 |
| 16. | DIOXINS | – | 0.1 |
| 17. | ETHYL NITRATE | – | 50 |
| 18. | ETHYLENE DIBROMIDE | 1605 | 50 |
| 19. | ETHYLENE OXIDE | 1040 | 50 |
| 20. | ETHYLENEIMINE | 1185 | 50 |
| 21. | FLUORINE | 1045 | 25 |
| 22. | FORMALDEHYDE (greater than 90%) | – | 50 |
| 23. | HYDROFLUORIC ACID SOLUTION (greater than 50%) | 1790 | 50 |
| 24. | HYDROGEN | 1049 | 50 |
| 25. | HYDROGEN CHLORIDE | | |
| | – Anhydrous | 1050 | 250 |
| | – Refrigerated Liquid | 2186 | 250 |
| 26. | HYDROGEN CYANIDE | 1051 | 20 |

| Item | Hazardous chemical | UN Nos included under name | Threshold quantity (tonnes) |
|------|---|----------------------------|-----------------------------|
| | | 1614 | |
| 27. | HYDROGEN FLUORIDE | 1052 | 50 |
| 28. | HYDROGEN SULFIDE | 1053 | 50 |
| 29. | LP GASES | 1011 | 200 |
| | | 1012 | |
| | | 1075 | |
| | | 1077 | |
| | | 1978 | |
| 30. | METHANE or NATURAL GAS | 1971 | 200 |
| | | 1972 | |
| 31. | METHYL BROMIDE | 1062 | 200 |
| 32. | METHYL ISOCYANATE | 2480 | 0.15 |
| 33. | OXIDES OF NITROGEN, including nitrous oxide, nitrogen dioxide and nitrogen trioxide | 1067 | 50 |
| | | 1070 | |
| | | 1660 | |
| | | 1975 | |
| | | 2201 | |
| | | 2421 | |
| 34. | OXYGEN | 1072 | 2 000 |
| | | 1073 | |
| 35. | PHOSGENE | 1076 | 0.75 |
| 36. | PROPYLENE OXIDE | 1280 | 50 |
| 37. | PROPYLENEIMINE | 1921 | 200 |
| 38. | SODIUM CHLORATE, solid | 1495 | 200 |
| 39. | SULFUR DICHLORIDE | 1828 | 1 |
| 40. | SULFUR DIOXIDE, LIQUEFIED | 1079 | 200 |
| 41. | SULFURIC ANHYDRIDE (Alt. SULFUR TRIOXIDE) | 1829 | 75 |
| 42. | TITANIUM TETRACHLORIDE | 1838 | 500 |
| 43. | TOLUENE DIISOCYANATE | 2078 | 200 |

Table 15.2

| Item | Hazardous chemical | Description | Threshold quantity (tonnes) |
|------|--------------------------------|--|-----------------------------|
| 1. | Explosive materials | Explosive of Division 1.1A | 10 |
| | | All other explosives of Division 1.1 | 50 |
| | | Explosive of Division 1.2 | 200 |
| | | Explosive of Division 1.3 | 200 |
| 2. | Compressed and liquefied gases | Compressed or liquefied gases of Division 2.1 or Subsidiary Risk 2.1 | 200 |
| | | Liquefied gases of Subsidiary Risk 5 | 200 |
| | | Compressed or liquefied gases that meet the criteria for Very Toxic in table 15.3 | 20 |
| | | Compressed or liquefied gases that meet the criteria for Toxic in table 15.3 | 200 |
| 3. | Flammable materials | Liquids that meet the criteria for Class 3 Packing Group I Materials (except for crude oil in remote locations) | 200 |
| | | Crude oil in remote locations that meet the criteria for Class 3 Packing Group I | 2 000 |
| | | Liquids that meet the criteria for Class 3 Packing Group II or III | 50 000 |
| | | Liquids with flash points <61°C kept above their boiling points at ambient conditions | 200 |
| | | Materials that meet the criteria for Division 4.1 Packing Group I | 200 |
| | | Spontaneously combustible materials that meet the criteria for Division 4.2 Packing Group I or II | 200 |
| | | Materials that liberate flammable gases or react violently on contact with water which meet the criteria for Division 4.3 Packing Group I or II | 200 |
| | | Materials that belong to Classes 3 or 8 Packing Group I or II which have Hazchem codes of 4WE (materials that react violently with water) | 500 |
| 4. | Oxidising materials | Oxidising material listed in Appendix A to the ADG Code | 50 |
| | | Oxidising materials that meet the criteria for Division 5.1 Packing Group I or II | 200 |
| 5. | Peroxides | Peroxides that are listed in Appendix A to the ADG Code | 50 |
| | | Organic Peroxides that meet the criteria for Division 5.2 | 200 |
| 6. | Toxic solids and liquids | Materials that meet the criteria for Very Toxic in table 15.3 except materials that are classified as Infectious Substances (Division 6.2) or as Radioactive (Class 7) | 20 |
| | | Materials that meet the criteria for Toxic in table 15.3 | 200 |

Work Health Safety Regulations, 2012