



RESTRICTIONS ON INGREDIENTS IN PRODUCT FORMULATIONS

1 SCOPE

- This document specifies restrictions on ingredients (raw materials) that are used, or likely to be used in paint, surface coating product and waterproofing product formulations.
- The restrictions are applied on the grounds of Workplace Health and Safety (WHS) and environmental concerns raised either within Australasia or overseas.
- The document applies to all products approved, or seeking approval, by APAS against APAS specification(s) within the Certification Scheme.
- This document is prepared in a manner compliant with the requirements of AS/NZS ISO/IEC 17065.
- APAS® is a registered trademark owned by CSIRO, the Scheme Owner, and protected under applicable laws. Use of the trademark or the Certification Scheme is prohibited unless prior approval in writing is obtained from CSIRO via the APAS Secretariat.

2 AUTHORITY AND RESPONSIBILITY

- The Executive Officer (EO) - APAS has full responsibility for ensuring compliance of certified products, and products seeking certification, to these requirements, and for the content of this document.

3 DEFINITIONS AND ACRONYMS

3.1 Definitions

The definition of terms used in this document and in the Certification Scheme can be found in APAS document AP-D001. In addition, the following definitions within this document shall apply:

- Certification Scheme:** The Certification system related to specified products (Paint, Surface Coating, Waterproofing and Non-Paint Products) to which the same specified requirements, specific rules and procedures apply. APAS is the applicable Certification Scheme.
- Client:** The organisation responsible to the Certification Body (APAS) for ensuring that certification requirements, including product requirements, are fulfilled. The Client nominates a person(s) directly responsible (APAS Signatory) within its organisation, and to communicate directly with the Certification Scheme (APAS).
- Recognised Manufacturing Unit (RMU):** A company voluntarily choosing to participate in the Certification Scheme (APAS) whereby its manufacturing facilities have been assessed in accordance with AP-D177 for supply of products certified to APAS Specifications. The RMU forms part of the Client. Historically referred to as the Supplier.
- Scheme Owner:** The organisation responsible for developing and maintaining the certification scheme. CSIRO is the APAS Scheme Owner.

- Secretariat:** The organisation that provides administrative support and other resources necessary to keep the Certification Scheme functioning. The Secretariat is vested in CSIRO.

3.2 Acronyms

APAS	Australian Paint Approval Scheme
CSIRO	Commonwealth Scientific and Industrial Research Organisation
EO	Executive Officer – APAS
GC	Gas Chromatography
MS	Mas Spectroscopy
RMU	Recognised Manufacturing Unit
SDS	Safety Data Sheet
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
TDS	Technical Data Sheet
WHS	Workplace Health and Safety

4 REFERENCED DOCUMENTS

- The following standards are referenced in this document:
 - AS ISO/IEC 17025** – General requirements for the competence of testing and calibration laboratories
 - AS/NZS ISO/IEC 17065** - Conformity assessment: Requirements for bodies certifying products, processes, and services
 - MIL MIL-PRF-24635F** – Performance Specification: Coating Systems, Weather-Resistant, Exterior Use

These documents may be purchased through the Reference Standards Australia website:

<https://www.standards.org.au/>

- The Therapeutic Goods (Poisons Standard - October 2023) Instrument 2023:** Part 2: Controls on Substances, Division 9 - Paint or Tinters (SUSMP)

This document is available from the Australian Government Federal Register of Legislation website at: [Therapeutic Goods \(Poisons Standard—October 2023\) Instrument 2023 \(legislation.gov.au\)](https://www.legislation.gov.au/ultra/instrument-detail/2023-01-23/2023-01-23-00001)

- The following APAS documents are referenced in this document:
 - AP-D001 Rules Governing How APAS® Operates
 - AP-D139 Application Form for Product Certification (Manufacturer)
 - AP-D140 Application Form for Child Product Certification (Reseller)
 - AP-D177 Rules Governing how Product Manufacturers Participate in APAS®

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- v. AP-F006 Application Form for Product Certification – Waterproofing Liquid Membranes
- vi. AP-F007 Application Form for Product Certification – Waterproofing Solid Membranes, Damp Proof Course and Flashing

All APAS documents are available for download from the APAS website: <https://vs.csiro.au/apas/documents/>

5 BACKGROUND

- a) APAS document AP-D123 has traditionally referenced the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) for restrictions on certain ingredients in surface coating (including paint, surface coating and waterproofing) product formulations.
- b) Historically, the SUSMP did not restrict any ingredients. It was merely stating that if more than the nominated quantity of those ingredients is present in a surface coating product(s), certain additional labelling requirements will apply.
- c) Overseas, restrictions such as those adhered to in USA have contained many more substances that were not formally restricted or even listed in Australia or New Zealand. This version of the document updates those restrictions in line with available information.

6 RMU REQUIREMENTS

6.1 General Requirements

- a) Clients applying for product approval(s) are required to sign a Declaration (refer to APAS documents AP-D139, AP-D140, AP-F006 and AP-F007 Section E) that the formula of the submitted product(s) complies with all requirements of this document.
- b) In addition to the requirements below, surface coating product(s) and/or tinter(s) formulations and materials used in waterproofing **shall not contain:**
 - i. Any asbestos pigmentation or coal tar epoxy resins or derivatives.
 - ii. More than 0.005% Lead.
 - iii. Any Antimony, Barium, Cadmium, Chromium and Selenium *if the surface coating product is to be applied to and/or the waterproofing product is in contact with:*
 - Any surface used for the collection and/or storage of potable water
 - Furniture
 - Any fence, wall, post, gate, or building (interior or exterior), other than those used for industrial purposes or mining or any oil terminal
 - Any premises used in the manufacture, processing, preparation, packaging or

servicing of products intended for human or animal consumption

- c) Means of demonstrating compliance are as per 6.2 below.

6.2 Methodology

- a) Through inspection of raw material Technical Data Sheets (TDSs) and Safety Data Sheets (SDSs), an assessment shall be made as to the likelihood of any prohibited ingredient being present, either as an impurity or as an intentional or unintentional ingredient.
- b) Where these documents indicate the presence or likely presence of the prohibited ingredient, a determination as to the actual level shall be undertaken by calculating the appropriate level.
- c) Alternatively, the level may be determined using standard analytical methods, for example gas chromatography and mass spectroscopy (GC / MS). These shall be conducted by a laboratory that is accredited to undertake such tests under AS ISO/IEC 17025. A copy of the test report shall be provided to APAS along with the product approval documentation.
- d) Where restricted ingredients are present at levels that are close to the specified limits, the EO may request analytical determinations.

6.3 Formulation Requirements

- a) Formulations (and materials used in waterproofing) submitted for approval must comply with each element in this section.
- b) See clause 6.1 b) above for additional content restrictions.
- c) Maximum levels quoted in Appendix A, Table 1 are calculated as percentages of the element or compound in upper case font present in the non-volatile portion of the paint.
- d) Maximum levels quoted in Appendix A, Table 2 are calculated as percentages of the compound in upper case font present in the total (wet) product formulation.

6.3.1 Prohibited Total Metals

- a) The non-volatile content of the product formulation shall not contain more than the prescribed levels of the substances listed in Appendix A, Table 1.
- b) Up to 10% by weight calcined inorganic oxide with less than 0.1% solubility in 0.1 molar hydrochloric acid may be included in product formulations as part of the overall pigment content.

6.3.2 Hazardous Air Pollutants (HAPs)

- a) The total product formulation shall not contain more than the prescribed levels of the substances listed in Appendix A, Table 2.



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7 RECORDS

- a) The Clients evidence of compliance with the requirements of clause 6 above shall be the signed application form, APAS document AP-D139, AP-D140, AP-F006 and AP-F007.

8 CHANGES

- a) When formulation (and materials used in waterproofing) changes are made that impact on the compliance of the product(s) to this document, the APAS Signatory shall provide to the EO a written notice of the nature of the change, its likely impact on certification compliance and what the Clients intention is with regard to certification.
- b) The EO shall assess the notice provided and determine the impact, if any, on certification and what needs to be done to retain certification.

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APPENDIX A

Table 1: Total Metal Content¹

Substance	Maximum Level (%w/w)
ANTIMONY and/or its compounds (other than antimony titanate pigments)	0.015 (<5%) ²
ARSENIC and/or its compounds	0.001
BARIUM and/or its compounds (except barium sulphate or barium metaborate)	0.10 (<5%) ²
BERYLLIUM and/or its compounds	0.0002
CADMIUM and/or its compounds	0.0005 (<0.1%) ²
CHROMIUM (VI) compounds	0.0001
CHROMIUM and/or its chromium (III) compounds	0.56 (<5%) ^{2, 3}
COBALT and/or its compounds	0.005 ⁵
COPPER and/or its compounds	0.01
FLUORIDE salts	0.18
LEAD and/or its compounds	0.005 (<0.009%) ²
MERCURY and/or its compounds	0.0002
MOLYBDENUM and/or its compounds	0.035
NICKEL and/or its compounds	0.02 ⁸
SELENIUM and/or its compounds	0.001 (<0.1%) ²
SILVER and/or its compounds	0.001
TANTALUM and/or its compounds	0.1
THALLIUM and/or its compounds	0.007
TUNGSTEN and/or its compounds	0.1
VANADIUM and/or its compounds	0.01 ⁹

Table 2: Hazardous Air Pollutants (HAPs)¹

Substance	Maximum Level (%w/w)
BENZENE	0.1
CHLORINATED SOLVENTS ⁴ total	0.05 (<5%) ²
METHYL, ETHYL, and BUTYL MONO-ETHERS of ethylene glycol or the acetates, total (Methyl, ethyl and Butyl Cellosolves and acetates)	0.05 (<10%) ^{2, 6}

Table 3: Other Hazardous Ingredients¹

Substance	Maximum Level (%w/w)
4, 4-methylenedianiline (MDA)	0.1

NOTE:

¹ Tables 1, 2 & 3 were originally based on the US specification MIL-PRF-24635 and have been modified to reflect more realistic and current requirements, including the current version of this document noted in clause 4 a) iii.

² Figures in brackets are current SUSPM levels.

³ Chromium III and its compounds are exempt and excluded from this calculation.

⁴ Includes carbon tetrachloride, chloroform (trichloromethane), methylene chloride (dichloromethane), tetrachloroethylene (perchloroethylene), 1,1,1-tri chloroethylene (methyl chloroform).

⁵ Total cobalt content may exceed 0.005% up to a maximum of 0.2%w/w only where a cobalt drier is used to effect proper drying.

⁶ Ethylene glycol monobutyl ether is exempt.



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APPENDIX B

Document History

Status: Current
Version: 11
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Document Version No.:	Date Published:	Summary of Changes:
11	07-12-2023	<ul style="list-style-type: none">Updated SUSMP reference to the current versionUpdated clause 6.1 b) ii. in line with APAS requirements for lead limitsUpdated Appendix A Table 1 in line with the current version of the SUSMP in relation to lead restrictionsMinor formatting changes
10	12-05-2023	<ul style="list-style-type: none">Updated document to include reference to waterproofing productsUpdated SUSMP informationMinor format changesRemoved clause numbers from Appendix A & B
9	11-06-2021	<ul style="list-style-type: none">Updated APAS website details within documentUpdated SUSMP reference to latest versionFurther defined clause 1 b) ScopeReplaced OH&S reference with WHS in clauses 1 c), 3.2General formatting changes
8	22-10-2020	<ul style="list-style-type: none">Addition of Appendix B Document History and removal of the Editorial Note previously used in document versionsUpdated clause 4 with new SUSMP version
7	25-09-2020	<ul style="list-style-type: none">Name change from <i>Restrictions on Ingredients in Paint Formulations</i> to <i>Restrictions on Ingredients in Product Formulations</i>Document brought in line with requirements of AS/NZS ISO/IEC 17065Updated document to the current formatIncorporation of definitions and acronymsExpands on the list of prohibited substances in surface coating productsUpdated limits to reflect currently available informationMinor editorial changesAddition of "People + Product = Protection" to Footer
6	05-09-2015	<ul style="list-style-type: none">New Document formatExpands the list of prohibited substances in paint and coating formulations
5	01-03.2000	<ul style="list-style-type: none">New document format