# Factsheet: Sources of Test Materials

Test materials required for the purposes of product testing are specified in the relevant product standard or the relevant product determination. Please consult these documents to ensure that you comply with the legislative requirements.

To minimise variations in test results, it is recommended these test materials be obtained from the sources listed below. For the purpose of check testing, test materials will be obtained from these sources. Please note, these sources are not endorsed by Standards Australia nor the Australian Government.

Test materials may or may not be certified to the specifications within the relevant determination or standard so purchasers should seek all necessary documentation from the source to ensure compliance.

If test materials are no longer available or if contact details have changed, please advise [energyrating@environment.gov.au](mailto:energyrating@environment.gov.au)

Please note the standards referenced in this document may have amendments issued from time to time and these are noted where relevant. The standards can be purchased from <https://infostore.saiglobal.com/> under ***Standards.***

# Referenced Standards

***AS/NZS 2040.1:2005***  
Performance of household electrical appliances - Clothes washing machines - Energy consumption and performance  
  
***AS/NZS 2442.1:1996***  
Performance of household electrical appliances - Rotary clothes dryers - Energy consumption and performance  
   
***AS/NZS 2007.1:2005***  
Performance of household electrical appliances - Dishwashers - Energy consumption and performance

Note that AS/NZS 2040, AS/NZS 2007 and AS/NZS 2442 Part 1 and Part 2 are being revised and will be re-published in due course. These revisions contain updates to some of the test materials used.

***AS/NZS 4474.1:2007***

Performance of household electrical appliances - Refrigerating appliances - Energy consumption and performance

Note that the following standards for refrigerators were published in 2018. When a replacement household refrigerating appliances determination is published and comes into force, these standards will replace AS/NZS 4474.1.

***AS/NZS IEC 62552-1:2018***

Household refrigerating appliances - Characteristics and test methods General requirements

***AS/NZS IEC 62552-2:2018***

Household refrigerating appliances - Characteristics and test methods Performance requirements

***AS/NZS IEC 62552-3:2018***

Household refrigerating appliances - Characteristics and test methods Energy consumption and volume

Users should be aware of the differences in test packages required in the above IEC standards.

***AS/NZS 4474.2:2009***

AS/NZS 4474.2 has been revised and published as AS/NZS 4474:2018 (no part number). When a replacement household refrigerating appliances determination is published and comes into force, this new standard will replace AS/NZS 4474.2 to support new labelling and MEPS requirements – see <http://www.energyrating.gov.au/document/decision-ris-household-refrigerators-and-freezers-0>

Sources of Test Materials

## Dishwasher Detergent

|  |  |
| --- | --- |
| **Material** | Dishwasher detergent (AS/NZS) |
| **Reference** | AS/NZS 2007.1 (Clause A8.1) |
| **Source 1:** | Environmental Standards Ltd  P.O. Box 2034  South Dunedin  New Zealand  Ph: +64 27 6459329  Fax: +64 27 4876435  Contact: Graham Henderson BSc(Hons), Lab manager  Email: [graham@eslchem.com](mailto:graham@eslchem.com)  <http://www.eslchem.com/> |
| **Source 2:** | Advance Chemicals:  Address: 5-6 Malton Court, (P.O. Box 164)  Altona, VIC 3018 AUSTRALIA  Telephone: +61 3 9398 4444  Fax: +61 3 9398 5278  E-mail: [sales@advancechemicals.com.au](mailto:sales@advancechemicals.com.au)  <http://advancechemicals.com.au/product-category/testing-standards/>  Contact: Joanne Philippe (AC)  Product code: PB1410 (250g =53402, 1kg =50713) |
| **Last Updated** | July 2018 |
| **Notes** |  |

## Dishwasher Rinse Agent

|  |  |
| --- | --- |
| **Material** | Dishwasher Rinse Agent |
| **Reference** | AS/NZS 2007.1 (Clause A9.1) |
| **Source 1:** | Environmental Standards Ltd  P.O. Box 2034  South Dunedin  New Zealand  Ph: +64 27 6459329  Fax: +64 27 4876435  Contact: Graham Henderson BSc(Hons), Lab manager  Email: [graham@eslchem.com](mailto:graham@eslchem.com)  <http://www.eslchem.com/> |
| **Source 2:** | Advance Chemicals:  Address: 5-6 Malton Court, (P.O. Box 164)  Altona, VIC 3018 AUSTRALIA  Telephone: +61 3 9398 4444  Fax: +61 3 9398 5278  E-mail: [sales@advancechemicals.com.au](mailto:sales@advancechemicals.com.au)  <http://advancechemicals.com.au/product-category/testing-standards/>  Contact: Joanne Philippe (AC)  Product code: LS1411 (1L =50715, 5L =50716) |
| **Last Updated** | July 2018 |
| **Notes** | Neutral rinse agent as specified in IEC 60436:1981. |

## Dishwasher – AS/NZS Load

There is no supplier of the AS/NZS load items as specified in AS/NZS 2007.1:2005 Paragraph A12.2. It is anticipated that the AS/NZS load will be deleted from a future revision of the standard.

## Dishwasher - IEC Load

|  |  |
| --- | --- |
| **Material** | IEC 60436 Edition 3 test load without serving pieces |
| **Reference** | AS/NZS 2007.1 (A12.3) |
| **Source** | Wfk Testgewebe GmbH  Christenfeld 10,  D - 41369 Brüggen,  Deutschland (Germany)  Tel.: +49-2157-871977  Fax: +49-2157-90657  Email: info@testgewebe.de or sales@testgewebe.de Contact: Mrs. Emine Mennen Websites: [www.testgewebe.de](http://www.testgewebe.de) and [www.testmaterials.com](http://www.testmaterials.com) |
| **Item codes** | AS/NZS item and description WFK code  1 dinner plate Arzberg 8500: WFK 98001  2 soup plate Arzberg 1382: WFK 98002  3 Dessert dish Arzberg 8500: WFK 98003  4 Cup Arzberg 1382: WFK 98004  5 Saucer Arzberg 1382 WFK 98005  6 Glass Schott Duran beaker: WFK 98006  7 Fork \* WFK 98071  8 Soup spoon \* WFK 98072  9 Knife \* WFK 98073-b  10 teaspoon \* WFK 98075  11 dessert spoon \* WFK 98075 |
| **Last Updated** | July 2018 |
| **Notes** | Notes:  \* Specified cutlery in IEC 60436 Edition 3 (and in AS/NZS2007.1:2005) is no longer available. The replacement items above are as specified in IEC 60436 Amendment 2 and IEC 60436 Edition 4. These are the closest equivalent load items available and are permitted for use in AS/NZS 2007.1 in the dishwasher determination (2015) Schedule 1 Part 4. |

## Dishwasher – Spinach (soil)

Tinned spinach is no longer readily available. The dishwasher determination now permits the use of an alternative spinach soiling agent “*frozen young spinach, finely minced and with no other additives or ingredients*”. This is set out in the determination (2015) Schedule 1 Part 2. The frozen spinach is prepared with a grinder as set out in the determination (2015) Schedule 1 Part 3. This spinach, and its preparation, is in line with IEC 60436 Edition 4. ***Clothes Washer – Non-Drum Type Detergent***

|  |  |
| --- | --- |
| **Material** | Non-Drum Type Detergent |
| **Standards Reference** | AS/NZS 2040.1 (Clause A8) |
| **Source:** | Advance Chemicals:  Address: 5-6 Malton Court, (P.O. Box 164)  Altona, VIC 3018 AUSTRALIA  Telephone: +61 3 9398 4444  Fax: +61 3 9398 5278  E-mail: [sales@advancechemicals.com.au](mailto:sales@advancechemicals.com.au)  <http://advancechemicals.com.au/product-category/testing-standards/>  Contact: Joanne Philippe (AC)  Product code: PB1412 (200g =52970, 500g =52399, 1kg =53429, 5kg =51326) |
| **Last Updated** | July 2018 |
| **Notes** |  |

## Clothes Washer - Drum Type Detergent

|  |  |
| --- | --- |
| **Material** | IEC Type B component of Drum Type Detergent |
| **Standards Reference** | AS/NZS 2040.1 Clause A8 |
| **Source 1:** | Advance Chemicals:  Address: 5-6 Malton Court, (P.O. Box 164)  Altona, VIC 3018 AUSTRALIA  Telephone: +61 3 9398 4444  Fax: +61 3 9398 5278  E-mail: [sales@advancechemicals.com.au](mailto:sales@advancechemicals.com.au)  <http://advancechemicals.com.au/product-category/testing-standards/>  Contact: Joanne Philippe (AC)  Product code: PB1413 (500g =52195, 5kg =52438, 20kg =52447)  (Can be supplied as a package with PB1413A perborate) |
| **Source 2:** | Wfk Testgewebe GmbH  Christenfeld 10,  D - 41369 Brüggen,  Deutschland (Germany)  Tel.: +49-2157-871977,  Fax: +49-2157-90657,  info@testgewebe.de or sales@testgewebe.de Contact: Mrs. Emine Mennen Websites: [www.testgewebe.de](http://www.testgewebe.de) and [www.testmaterials.com](http://www.testmaterials.com)  Product code: 88020, IEC-B BASE Detergent (5 kg bucket) |
| **Source 3:** | Center for Testmaterials  Address: Stoomloggerweg 11  3133 KT Vlaardingen  the Netherlands  Telephone: +31 (0)10-4603955  Fax: +31 (0)10-4340236  e-mail [info@cftbv.nl](mailto:info@cftbv.nl)  Web: <http://www.cftbv.nl>  Product Code: W-IEC B (5kg buckets) |
| **Last Updated** | July 2018 |
| **Notes** | This is the IEC 60456 Type B component of the drum type detergent. This formulation is no longer listed in the latest edition of IEC 60456. ***It is necessary to add sodium perborate tetrahydrate (5% by mass) to complete the mixture prior to testing.*** This is different to IEC Type A\* in IEC 60456 Ed 5. |

## Clothes Washer – Detergent additive – sodium perborate tetrahydrate

|  |  |
| --- | --- |
| **Material** | Sodium perborate tetrahydrate – added to IEC B drum type detergent. |
| **Standards Reference** | AS/NZS 2040.1 (Clause A8) |
| **Source 1:** | Advance Chemicals:  Address: 5-6 Malton Court, (P.O. Box 164)  Altona, VIC 3018 AUSTRALIA  Telephone: +61 3 9398 4444  Fax: +61 3 9398 5278  E-mail: [sales@advancechemicals.com.au](mailto:sales@advancechemicals.com.au)  <http://advancechemicals.com.au/product-category/testing-standards/>  Contact: Joanne Philippe (AC)  Product code: PB1413A (can be supplied as a package with PB1413 Type B detergent) |
| **Source 2:** | Wfk Testgewebe GmbH  Christenfeld 10,  D - 41369 Brüggen,  Deutschland (Germany)  Tel.: +49-2157-871977,  Fax: +49-2157-90657,  info@testgewebe.de or sales@testgewebe.de Contact: Mrs. Emine Mennen Websites: [www.testgewebe.de](http://www.testgewebe.de) and [www.testmaterials.com](http://www.testmaterials.com)  Product code: 88011 (1kg bucket) |
| **Source 3:** | Center for Testmaterials  Address: Stoomloggerweg 11  3133 KT Vlaardingen  the Netherlands  Telephone: +31 (0)10-4603955  Fax: +31 (0)10-4340236  e-mail [info@cftbv.nl](mailto:info@cftbv.nl)  Web: <http://www.cftbv.nl>  Product Code: W-SPB (1kg bucket) |
| **Last Updated** | July 2018 |
| **Notes** | It is necessary to add sodium perborate tetrahydrate (5% by mass) to complete the IEC 60456 Type B mixture prior to testing. |

## Clothes Washer - Load to AS/NZS 2040.1 (Amendment 1, 2007)

|  |  |
| --- | --- |
| **Material** | Load items to AS/NZS 2040.1-2005 (Amendment 1, 2007) – see table below |
| **Reference** | AS/NZS 2040.1 (Clause A12 and Table C1) |
| **Source:** | D M KOZAN  Address: 107/5 Wulumay Close, Rozelle, NSW 2039, Australia  Telephone: +61 418 207 530  E-mail: dkozan@bigpond.com  Contact: Dilek Kozan |
| **Last Updated** | July 2018 |
| **Notes** | Load item sizes and masses have been altered in Amendment 1. See table below for item list and codes. |

## Clothes Washer - Load Items

|  |  |  |  |
| --- | --- | --- | --- |
| Code | Item | Nominal Bone Dry Mass (kg) | **Description (size cm)** |
| SH01 | Sheets | 0.73 | Cotton sheeting, White 180 × 240, Flat, 170 gsm material |
| BT01 | Bath towels | 0.33 | Cotton terry, White 60 × 120, Rectangular |
| TC01 | Tablecloths | 0.24 | Cotton sheeting, White 117 × 117, 170 gsm material |
| BS01 | Shirts | 0.20 | Polyester/cotton, White size 41, Long sleeve men’s |
| TS01 | T-shirts | 0.15 | Cotton interlock, White 115 (3XL), Raglan sleeve |
| PC01 | Pillow cases | 0.13 | Cotton sheeting, White 50 × 75, 170 gsm material |
| US01 | Undershorts | 0.09 | Cotton interlock, White Waist 95–100 |
| FW01 | Wash Cloths | 0.06 | Cotton terry White 33 × 33 (face washers) |
| HK01 | Handkerchiefs | 0.014 | Cotton White 40 × 43 |
|  | Notes |  | Amendment 1 to AS/NZS 2040.1-2005 was published on 30 April 2007. Sizes and materials in the published standard were adjusted to ensure that the makeup Table C2 gives a total test load mass that is close to that required. The same load should be used for dryer testing. Note that once a load has been used for dyer tests, it cannot be used for washer tests (and vice versa). |

## Clothes Washer – Anti-Sudsing Agent

|  |  |
| --- | --- |
| **Material** | Silcone based Anti Sudsing Agent |
| **Reference** | AS/NZ 2040.1 (Clause A9 ) |
| **Source:** | Advance Chemicals:  Address: 5-6 Malton Court, (P.O. Box 164)  Altona, VIC 3018 AUSTRALIA  Telephone: +61 3 9398 4444  Fax: +61 3 9398 5278  E-mail: [sales@advancechemicals.com.au](mailto:sales@advancechemicals.com.au)  <http://advancechemicals.com.au/product-category/testing-standards/>  Contact: Joanne Philippe (AC)  Item code: LN1414 (1L =50696, 5L =50697, 10L =50695) |
| **Last Updated** | July 2018 |
| **Notes** | Anti-sudsing agent is an optional inclusion in a clothes washer test where over sudsing is a problem. It is an emulsion with a nominal 10% silicone oil and the balance of water and non ionic emulsifiers. |

## Clothes Washer - Soil Removal Swatches

|  |  |
| --- | --- |
| **Material** | AS-9 Soiled Swatches |
| **Reference** | AS/NZS 2040.1 (Clause A10) |
| **Source** | Center for Testmaterials  Address: Stoomloggerweg 11  3133 KT Vlaardingen  the Netherlands  Telephone: +31 (0)10-4603955  Fax: +31 (0)10-4340236  e-mail [info@cftbv.nl](mailto:info@cftbv.nl)  Web: <http://www.cftbv.nl> |
| **Last Updated** | July 2018 |
| **Notes** | These swatches are mandatory for performance tests to AS/NZS 2040.1 for energy labelling. All tests should use approved batches of AS-9 and these batches should be included in the latest Swatch Normalisation Calculator, which is used to calibrate each approved batch. See ***Key Documents*** on <http://www.energyrating.gov.au/products/clothes-washers> |

## Clothes Washer - Severity of Wash Swatches

|  |  |
| --- | --- |
| **Material** | Cosmo embroidery fabric, Article No. 1100-33 or material having identical properties. |
| **Reference** | AS/NZS 2040.1 Clause A11 |
| **Source 1** | FUJI INDUSTRIES CO., LTD.  New Material & Advanced Machinery Dept.  Mr. Kengo HARADA  MEIKAI BLDG.  32, AKASHI-MACHI, CHUO-KU, KOBE 650-0037, JAPAN  TEL: +81 78-331-2521  FAX: +81 78-332-1485  Preferred email: [SALES1@ficjpn.co.jp](mailto:SALES1@ficjpn.co.jp)  Personal email: [k.harada@ficjpn.co.jp](mailto:k.harada@ficjpn.co.jp)  URL: <http://www.ficjp.com>  Note: the preferred email is checked by all team members and so should provide the best service. |
| **Source 2** | Center for Testmaterials  Address: Stoomloggerweg 11  3133 KT Vlaardingen  The Netherlands  Telephone: +31 (0)10-4603955  Fax: +31 (0)10-4340236  e-mail [info@cftbv.nl](mailto:info@cftbv.nl)  Web: <http://www.cftbv.nl> |
| **Last Updated** | July 2018 |
| **Notes** | The following item numbers have the same base material and are suitable alternatives:  1100-10 = off white  1100-11 = white  1100-35 = ivory  Item 1100-33 (pink) is no longer available. |

## Clothes Dryer – Load to AS/NZS 2442.1:1996

|  |  |
| --- | --- |
| **Title** | Clothes Dryer Load Items |
| **Description** | Load Items |
| **Reference** | AS/NZS 2040.1 (Appendix E – Table E1) |
| **Source** | D M KOZAN  Address: 107/5 Wulumay Close, Rozelle, NSW 2039, Australia  Telephone: +61 418 207 530  E-mail: dkozan@bigpond.com  Contact: Dilek Kozan |
| **Last Updated** | July 2018 |
| **Notes** | Same load items as per the clothes washer standard AS/NZS 2040.1 should be used. |

## Clothes Dryer – Adhesive Temperature Indicators

|  |  |
| --- | --- |
| **Material** | Adhesive Temperature Indicators |
| **Reference** | AS/NZS 2442.1 Clause 4.3, Appendix D, Clause F4.2 |
| **Source** | Measure-Tech Australia  Showroom and Office  63 Waterview Drive  Dandenong South, VIC 3175 Australia  Ph: +61 3 8787 3687  Email: [sales@measuretech.com.au](mailto:sales@measuretech.com.au)  <http://measuretech.com.au/16-non-reversible-thermax-label-strip>  Suitable models are:  04STHE-E – temperature range 127°C to 143°C  05CTHE-4 – temperature range 116°C to 138°C  08STHE-C – temperature range 116°C to 154°C |
| **Last Updated** | July 2018 |
| **Notes** |  |

## Refrigerator – Freezer Test Packages

|  |  |
| --- | --- |
| **Title** | IEC Freezer Test Packages |
| **Description** | Made up freezer test packs for refrigerator testing |
| **Reference** | AS/NZS 4474.1 (Clause B6.1) |
| **Source 1** | Independent Power Ltd (NZ)  12B Te Kea Place, Rosedale  AUCKLAND 0632, NEW ZEALAND  Phone: +64 9 415 6686  Fax: +64 9 415 6685  Contact: Jennie Page, General Manager  Email: [sales@indepower.co.nz](mailto:sales@indepower.co.nz)  Website: [www.indepower.co.nz](http://www.indepower.co.nz) |
| **Source 2** | MADI S.r.l. (Italy)  Address: Via delle Industrie 2/4  26838 TAVAZZANO CON VILLAVESCO (LO) ITALY  Tel: +39 0371 761441  Fax: +39 0371 477073  E-mail: [madisnc@madisnc.com](mailto:madisnc@madisnc.com)  Website: [www.madisnc.com](http://www.madisnc.com)  Contact: Massimo Fusari or Diego Fusari (MADI snc)  ISO 9001-2000 certified by DNV (Det Norske Veritas) for the  supply of ISO/IEC test packages.  Test packages for -1°C, -5°C and M packages availalble. |
| **Source 3** | Refrigeration Developments and Testing Ltd (UK)  Churchill Building, Langford, North Somerset, BS40 5DU, UK  Tel: +44(0)117 928 9239  Fax: +44(0)117 928 9314  email: [rdandt@rdandt.co.uk](mailto:rdandt@rdandt.co.uk)  Website: <http://www.rdandt.co.uk/pages/testpack>  ISO9000 certified for test packages by URS/UKAS. Test packages  for -1°C, -5°C and M packages availalble |
| **Last Updated** | July 2018 |
| **Notes** | Test packs should remain frozen when not in use. It is recommended that a mould is used to ensure that the packs are frozen into the correct shape. AS/NZS 4474.1 allows the use of test packages with a freezing point of -1°C or -5°C.  When a replacement household refrigerating appliances determination is published and comes into force, AS/NZS IEC 62552-1 will be referenced by the legislation. There is no restriction on the use of -1°C or -5°C packages in two‑star, three‑star or four‑star frozen compartments in AS/NZS IEC 62552‑1. However, this new standard restricts the use of test packages as follows:   1. For chill compartments (all tests), only -5°C packages shall be used 2. For the light load during the freezing capacity test, only ‑1°C packages shall be used 3. For one-star compartments (all tests), only -1°C packages shall be used.   AS/NZS IEC 62552-1 specifies that the mass of freezer test packages shall be 500g. However, AS/NZS IEC 62552-1 permits the use of 1kg packages in certain circumstances. Future test package acquisitions should take these requirements into account. |