# 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

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 LtdP.O. Box 2034South DunedinNew ZealandPh: +64 27 6459329Fax: +64 27 4876435Contact: Graham Henderson BSc(Hons), Lab managerEmail: graham@eslchem.com <http://www.eslchem.com/>  |
| **Source 2:** | Advance Chemicals:Address: 5-6 Malton Court, (P.O. Box 164)Altona, VIC 3018 AUSTRALIATelephone: +61 3 9398 4444Fax: +61 3 9398 5278E-mail: 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 LtdP.O. Box 2034South DunedinNew ZealandPh: +64 27 6459329Fax: +64 27 4876435Contact: Graham Henderson BSc(Hons), Lab managerEmail: graham@eslchem.com <http://www.eslchem.com/> |
| **Source 2:** | Advance Chemicals:Address: 5-6 Malton Court, (P.O. Box 164)Altona, VIC 3018 AUSTRALIATelephone: +61 3 9398 4444Fax: +61 3 9398 5278E-mail: 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 GmbHChristenfeld 10, D - 41369 Brüggen, Deutschland (Germany)Tel.: +49-2157-871977 Fax: +49-2157-90657 Email: info@testgewebe.de or sales@testgewebe.deContact: Mrs. Emine MennenWebsites: [www.testgewebe.de](http://www.testgewebe.de) and [www.testmaterials.com](http://www.testmaterials.com) |
| **Item codes** | AS/NZS item and description WFK code1 dinner plate Arzberg 8500: WFK 980012 soup plate Arzberg 1382: WFK 980023 Dessert dish Arzberg 8500: WFK 980034 Cup Arzberg 1382: WFK 980045 Saucer Arzberg 1382 WFK 980056 Glass Schott Duran beaker: WFK 980067 Fork \* WFK 980718 Soup spoon \* WFK 980729 Knife \* WFK 98073-b10 teaspoon \* WFK 9807511 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 AUSTRALIATelephone: +61 3 9398 4444Fax: +61 3 9398 5278E-mail: 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 AUSTRALIATelephone: +61 3 9398 4444Fax: +61 3 9398 5278E-mail: 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 GmbHChristenfeld 10, D - 41369 Brüggen, Deutschland (Germany)Tel.: +49-2157-871977, Fax: +49-2157-90657, info@testgewebe.de or sales@testgewebe.deContact: Mrs. Emine MennenWebsites: [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 TestmaterialsAddress: Stoomloggerweg 113133 KT Vlaardingenthe NetherlandsTelephone: +31 (0)10-4603955Fax: +31 (0)10-4340236e-mail 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 AUSTRALIATelephone: +61 3 9398 4444Fax: +61 3 9398 5278E-mail: 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 GmbHChristenfeld 10, D - 41369 Brüggen, Deutschland (Germany)Tel.: +49-2157-871977, Fax: +49-2157-90657, info@testgewebe.de or sales@testgewebe.deContact: Mrs. Emine MennenWebsites: [www.testgewebe.de](http://www.testgewebe.de) and [www.testmaterials.com](http://www.testmaterials.com)Product code: 88011 (1kg bucket) |
| **Source 3:** | Center for TestmaterialsAddress: Stoomloggerweg 113133 KT Vlaardingenthe NetherlandsTelephone: +31 (0)10-4603955Fax: +31 (0)10-4340236e-mail 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 KOZANAddress: 107/5 Wulumay Close, Rozelle, NSW 2039, AustraliaTelephone: +61 418 207 530 E-mail: dkozan@bigpond.comContact: 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 AUSTRALIATelephone: +61 3 9398 4444Fax: +61 3 9398 5278E-mail: 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 TestmaterialsAddress: Stoomloggerweg 113133 KT Vlaardingenthe NetherlandsTelephone: +31 (0)10-4603955Fax: +31 (0)10-4340236e-mail 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 HARADAMEIKAI BLDG.32, AKASHI-MACHI, CHUO-KU, KOBE 650-0037, JAPANTEL: +81 78-331-2521FAX: +81 78-332-1485Preferred email: SALES1@ficjpn.co.jp Personal email: 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 TestmaterialsAddress: Stoomloggerweg 113133 KT VlaardingenThe NetherlandsTelephone: +31 (0)10-4603955Fax: +31 (0)10-4340236e-mail 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 white1100-11 = white1100-35 = ivoryItem 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 KOZANAddress: 107/5 Wulumay Close, Rozelle, NSW 2039, AustraliaTelephone: +61 418 207 530 E-mail: dkozan@bigpond.comContact: 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 AustraliaShowroom and Office63 Waterview DriveDandenong South, VIC 3175 AustraliaPh: +61 3 8787 3687Email: 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°C05CTHE-4 – temperature range 116°C to 138°C08STHE-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, RosedaleAUCKLAND 0632, NEW ZEALANDPhone: +64 9 415 6686 Fax: +64 9 415 6685Contact: Jennie Page, General ManagerEmail: 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 2/426838 TAVAZZANO CON VILLAVESCO (LO) ITALYTel: +39 0371 761441Fax: +39 0371 477073E-mail: 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 thesupply 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, UKTel: +44(0)117 928 9239Fax: +44(0)117 928 9314email: rdandt@rdandt.co.uk Website: <http://www.rdandt.co.uk/pages/testpack> ISO9000 certified for test packages by URS/UKAS. Test packagesfor -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. |