Specifications for coloured polyethylene terephthalate (PET) cold washed flake

These generic specifications have been prepared to assist Australian secondary plastics treatment facilities produce coloured recycled PET (rPET) flake or pellets to US and EU standards in Australia and overseas for non-food applications. These specifications are voluntary.

There is diversity in the capacity of plastics processing facilities. Some include sorting, hot wash or cold wash, flake and compounding, and some specialise in compounding and pelletising for manufacturers of packaging and products. All companies should seek details from their customers on their specific requirements. The test methods in the table below are included for reference.

These specifications have been developed in consultation with experts in the sector on national and international trends on markets, price, quality, equipment and processes. We acknowledge Plastics Recyclers Europe for the generic template, specifications from The Netherlands, and the contribution of MRF operators, plastics processors and other industry experts in helping prepare this generic specification.

Two streams of rigid PET

There are two common streams of rigid PET packaging that have different physical properties and hence different value in the Australian and global markets. These specifications are geared to coloured and thermoformed PET.

These specifications cover:

* Coloured PET that may be used for non-food packaging applications i.e., household chemical bottles e.g., turpentine etc.
* Thermoformed PET trays, clam shells and punnets.

Note: If clear, monolayer PET thermoformed trays and punnets (meat, fruit, bakery etc) could be sorted and separated from beverage bottles by MRFs and baled separately, then they could be included in a higher value stream to make PET hot wash flake suitable for food grade rPET for thermoformed packaging.

For [clear uncoloured PET bottles](https://anzpacplasticspact.org.au/wp-content/uploads/2021/11/Specifications-for-PET-hot-washed-flake.docx) refer to the other specifications within this series.

PET packaging design

For PET packaging design, the following resources are available:

* [Quickstart Guide to Designing for Recyclability: PET Packaging](https://documents.packagingcovenant.org.au/public-documents/Quickstart%20Guide%20-%20Designing%20for%20Recyclability;%20PET%20Packaging)
* [Action Plan for Problematic and Unnecessary Single-Use Plastic Packaging](https://documents.packagingcovenant.org.au/public-documents/Action%20Plan%20for%20Problematic%20and%20Unnecessary%20Single-Use%20Plastic%20Packaging)
* [Sustainable Packaging Guidelines](https://documents.packagingcovenant.org.au/public-documents/Sustainable%20Packaging%20Guidelines%20(SPGs))

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Instructions: Enter responses into the relevant fields as appropriate to your operations, outputs and customers. Some parts of these specifications are more important than others for entry of data for compliance. For example, contamination and colour are more important than density of flake in the bag. Testing methods are suggested (from EU templates); specify if using alternative test methods particularly for export. Testing may not be a required element for Australian customers, but may be required for export licences.

|  |  |
| --- | --- |
| Supplier information | |
| Company name |  |
| Company address |  |
| Additional sorting information |  |
| Date |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Specifications for coloured polyethylene terephthalate (PET) cold washed flake | | | |
|  | Enter data in this column | Good practice / description of options for responses | |
| Characteristics | |  | |
| Product name |  | Cold wash flake PET. | |
| Product reference |  | Number xxx. | |
| Origin of the materials |  | Post-consumer kerbside.  Container Deposit Scheme (CDS).  Post-industrial.  Pre-consumer industrial. | |
| Suitable applications for treated materials |  | Non-food grade packaging and products.  Non-packaging applications. | |
| Colour |  | Describe flake colour. | |
| Technical Properties | | Values | Test method options |
| Bulk density |  | 250-500 kg/m3 | Annex B ISO 12418-2 or ISO 60 |
| Intrinsic Viscosity (IV) |  | 0.73-0.84 dl/g | ISO 1628-5 or EN ISO 1133 |
| Melting temperature range |  | 245 – 255 °C | ISO 113547-3:2016 |
| Flake size (average) |  | 98% 3-12mm mm | Annex A of EN 15348:2007 |
| Flake distribution (min – max) | \_\_\_\_% < 1mm  \_\_\_\_% ≥ 12mm | <1mm = 0.5 wt% max.  ≥ 12mm = 0.1 wt% | Annex A of EN 15348:2007 |
| Fines |  | ≤ 1.00 weight % | Annex A of EN 15348:2007 |
| Moisture |  | ≤ 1.00 % or lower ie ≤ 0.7 weight % | Moisture Analyser, Muffle oven or TGA weight loss at 105°C, EN ISO 287-2009 |
| Impurities | | Impurities visible in flake | Visual inspection |
| Total impurities content (max %) |  | ≤ 80 ppm |  |
| PVC content |  | ≤ 50 ppm | Annex A of ISO 12418-2:2012 or Annex D of DIN EN 15348 |
| Polyolefins content (PE, PP) |  | ≤ 25 ppm | Annex A of ISO 12418-2:2012 or Annex D of DIN EN 15348 |
| Metal content |  | ≤ 10 ppm | Annex A of ISO 12418-2:2012 or Annex D of DIN EN 15348 |
| Paper content |  | <20 ppm | Annex A of ISO 12418-2:2012 or Annex D of DIN EN 15348 |
| Wood content |  | <20 ppm | Annex A of ISO 12418-2:2012 or Annex D of DIN EN 15348 |
| Other contaminants |  | ≤ 10 ppm | Annex A of ISO 12418-2:2012 or Annex D of DIN EN 15348 |
| Appearance |  | Describe if the flake has a normal appearance | Visual inspection |
| Transport | |  | |
| Packaging | | Packed in PP bulk bags, with labelling that includes information that covers:   * Product code and name. * Batch number. * Date of manufacture. * Name of manufacturer and production factory. * Gross and tare weight. * Special handling requirements. | |
| Transport/contract documents | | The documents will be provided upon delivery stating quantity, supplier, source, bag IDs. | |
| Truck load | | Tautliner (preferred) or tarpaulin truck 17-20 tonne load. | |

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