



UNBENEFICIATED CULLET SPECIFICATIONS (GLASS)

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1. Purpose

These specifications aim to achieve best practice in recycling unbeneficiated glass cullet, covering the following:

- Chemical composition
- Sizing
- Colour
- Contaminants
- Purchase agreement
- Testing and sampling

These specifications apply to unbeneficiated glass cullet suitable for use in the manufacturing of glass containers in Australia.

This specification document is a benchmark for buyers and suppliers within the Australian recycling industry. ACOR welcomes feedback on all specifications at any time to ensure they reflect the current industry best practice. Individual buyers and sellers can reference this booklet as a workbook or a reference for trading and negotiation. It is not compulsory for buyers and sellers to comply with the standards. However, buyers and sellers are strongly encouraged to work together and reach an agreement regarding terms and conditions.

2. Definitions

Processed glass cullet: Crushed and contaminate- free glass.

Unprocessed glass cullet: A piece of whole or broken glass.

Organic matter: Non- glass items that consist of organic materials, include, but are not limited to, paper labels.

Ferrous materials: Magnetic metals, such as iron, steel, etc.

Non- ferrous materials: Non- magnetic metals, such as aluminium, copper, lead, etc.

3. Container Glass Recycling

The highest and best use of recycled container glass is bottle- to- bottle. However, other uses exist such as aggregate and building materials. Container glass includes:

- Clear, green, amber or brown bottles, including wine, beer, juice, soft drink and sauce bottles
- Glass jars that are used to contain jams or spreads

4. Chemical Composition

The table below shows the chemical composition of unbeneficiated glass cullet. It applies to a majority of glass containers that are used for beverage and food packaging.

Chemical components	Content
$\text{Na}_2\text{O} + \text{K}_2\text{O} + \text{Li}_2\text{O}$	12- 15%
$\text{CaO} + \text{MgO}$	10- 13%
Al_2O_3	1- 2%
Other Oxides (except SiO_2)	0-1%
SiO_2	Balance

5. Sizing

- 50% of cullet by weight must be more than 60mm across and must not be crushed
- The minimum amount of cullet should be less than 8mm in size

6. Colour

Colour	Specifications
Flint	<ul style="list-style-type: none"> • Minimum flint glass 98.0%. • Maximum glass of other colours 2.0%, of which not more than 0.3% may be dark green or dark blue glass.
Amber	<ul style="list-style-type: none"> • Minimum amber glass 90.0%. • Maximum glass of other colours 10%, of which not more than 5.0% may be dark green and not more than 5.0% may be dark blue glass.
Green	<ul style="list-style-type: none"> • Minimum green glass 90.0%. • Maximum glass of other colours 10.0%, of which not more than 1.0% may be dark blue glass.
Mixed	No specific colour requirement issued.

*Note 1. Dark green includes emerald, classic and antique green. Dark green does not include Georgia or French green.

Note 2. Light blue glass should not be included in the green glass to maximum of 5%.

7. Contaminants

7.1. Hazard

Other non- glass materials should not exceed the contamination levels that are listed below:

Contaminant	Content
Non- glass material in general	Must not exceed 5kg per tonne of glass cullet.
Other non- glass materials, including <ul style="list-style-type: none"> • Ceramics • Stones • Plates • China cups • Opal glass • Ovenware • Pyrex • Refractory products and bricks 	Must not contain more than 5kg per tonne.

7.2. Prohibited

A cullet should be free from any materials below:

- Non- glass containers, including aluminium cans and containers, plastic bottles and containers, and steel containers
- Any Pyroceramic material, including, but not limited to clear amber, clear cranberry and white, and opaque Visionware

8. Purchase Agreement

8.1. Grade Specifications

Each glass cullet grade should be specified in accordance with these specifications.

8.2. Quantity

The quantity should be specified in tonne(s).

8.3. Packaging

- It should be clearly stated whether shipped units are to be boxed, or transported in bulk by car, truck or trailer.
- The approximate sizes and weights should be clearly and concisely specified.

8.4. Price

- The agreed price should be clearly stated in Australian currency per tonne, including other relevant agreed shipping terms.
- If overseas currencies are used, both parties should agree with payment terms, regarding the exchange rates based on either the day of transaction or payment.

8.5. Rejection

If the shipment is NOT aligned with the order, shipping notice and other parameters that are agreed between both parties and/ or does NOT conform to any requirements set forth in these specifications, the buyer may seek to reserve the right to totally or partially reject cullet.

9. Testing and Sampling

The buyer and the seller should reach an agreement on the testing and sampling methods in terms of size, contaminant levels, and colours.