

Bread Improver Cheat Sheet

Synergy Healthcare Australia
Bulk food ingredients, Melbourne

Every common improver ingredient on one page: its Australian code, the job it does and where it earns its place. Pin it above the mixer.

1 The ingredients and their jobs

EMULSIFIERS

Sodium stearoyl lactylate (SSL) 481

Strengthens dough, lifts volume and softens crumb in one ingredient.

Sandwich loaves, rolls, buns. The most listed emulsifier on Australian bread.

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DATEM 472e

The heavy lifter for dough strength and oven spring.

High-speed lines, high-fibre and seeded doughs that need extra tolerance.

ASK US ABOUT ALTERNATIVES

Mono and diglycerides (GMS) 471

Binds to starch to slow staling and keep crumb soft.

Any loaf that must stay soft for 4 to 7 days on shelf.

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Lecithin (soy or sunflower) 322

Gentle emulsifier for softness and dough handling.

Clean-label builds. Sunflower avoids a soy declaration.

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ENZYMES (PROCESSING AIDS, USUALLY NOT ON THE LABEL)

Fungal alpha-amylase no code

Turns damaged starch into sugar for the yeast; boosts volume and crust colour.

Low-diastatic flours and fast proofs.

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Xylanase (often blended with amylase) no code

Improves extensibility and loaf volume.

Wholemeal, high-fibre and grain breads.

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DOUGH CONDITIONERS AND BOOSTERS

Ascorbic acid 300

Oxidiser that tightens the gluten network and improves gas retention.

Used in tiny amounts. Too much makes dough tight.

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L-cysteine 920

Reducing agent that relaxes tough dough and cuts mixing time.

Rolls, pizza and laminated doughs that spring back.

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Vital wheat gluten no code

Adds protein and structure; rescues weak flour.

On 69% of Australian bread labels we studied.

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Calcium sulphate 516

Flour treatment agent that firms dough and supports yeast.

Common in Australian retail improver blends.

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2 Three dosing rules

~1%

Complete improver

About 10 g per kg of flour is a common starting dose for complete blends.

TDS

Concentrates and enzymes

Dose from the supplier's data sheet. Enzyme activity differs between products and batches.

1 at a time

Trials

Change one component per trial and judge the crumb on day three.

Troubleshoot, build, buy

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3 Symptom to fix

Loaf goes stale by day two

Add or raise 471, or ask about an anti-staling enzyme.

Sticky, gummy crumb

Amylase is likely overdosed. Cut it back.

Slack dough that spreads

Add structure: vital wheat gluten or a little ascorbic acid.

Mould before best-before

Vinegar, cultured wheat flour or calcium propionate (282).

Low volume, dense crumb

Check gluten strength first, then look at 481, 472e or xylanase.

Dough tight, tears, will not rise

Too much oxidiser. Reduce ascorbic acid or add L-cysteine.

Pale crust

Not enough sugar for browning. Fungal amylase or malt flour helps.

Uneven results between batches

Test incoming flour and lock your improver spec with a COA.

4 Two ways to build it

Code-friendly, maximum performance

- SSL (481) for strength and softness
- GMS (471) for shelf life
- Ascorbic acid (300) for tolerance
- Fungal amylase and xylanase
- Soy or wheat flour as the carrier

Clean label, fewer codes

- Enzyme system: amylase plus xylanase
- Sunflower lecithin (322) for softness
- Malt flour for colour and fermentation
- Vital wheat gluten for structure
- Vinegar or cultured flour for mould control

5 What 103 Australian bread labels show

48%

list emulsifier 481, the most used improver emulsifier

23%

combine 471, 472e and 481 in one loaf

6%

name an enzyme, because processing aids need not be listed

30%

carry no additive codes at all

Synergy Healthcare analysis of 103 wheat and rye breads and rolls sold in Australia (38 brands), Open Food Facts ingredient lists retrieved 15 October 2026.

6 Before you buy

- ☐ Function matched to product: softness, volume or tolerance
- ☐ Label decided: code-friendly or clean label
- ☐ Allergens checked: soy flour and soy lecithin need a soy declaration
- ☐ COA with every batch and a TDS stating dose and enzyme activity
- ☐ Bench trial booked before the first full production run

Build your improver from the ingredients up.

Bulk SSL, GMS, lecithin, enzymes, ascorbic acid and vital wheat gluten from our Melbourne warehouse, with a COA on every order.

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