

MOLECULAR GASTRONOMY

# THE COMPOUND GAME **NOTE BY NOTE**

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# BRIEF & CONCEPT



## THE BRIEF:

"Reduce production costs and time, reduce calories, **but mind the flavour.**"

## WHY CHESS:

Chess and NbN cooking share the same discipline: every move – like every compound – has to be **deliberately chosen and justified**, nothing is left to instinct or tradition

## THE CORE IDEA:

- Instead of trying to make a "healthier dessert" by tweaking a recipe, I rebuilt it from scratch – choosing each compound
- Chess is a two-player game → **two-person dessert**
- **Natural marketing hook:** a dessert you literally can't enjoy alone

# DISH OVERVIEW

## ISOMALT SHELL CHESS PIECES

**Caramel flavoured** isomalt chess pieces with a **crisp texture**.



## PECTIN GEL FILLING

**Saffron flavoured** pectin gel filling provides a smooth, **soft contrast to the crisp isomalt shell**.



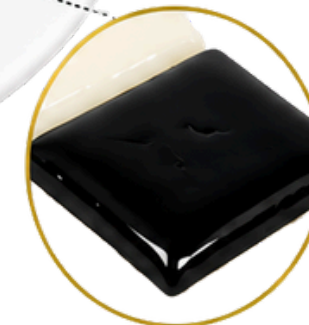
## WHITE AGAR SQUARES

**Meringue flavoured** white chess squares made from agar gel. A **light, sweet taste**.



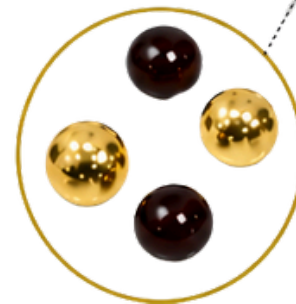
## BLACK AGAR SQUARES

**Coffee flavoured** black chess squares made from agar gel. A **rich, aromatic taste**.



## DECORATIVE ISOMALT PEARLS

Small pearls as a **by-product** of the isomalt shell production process.





# BLACK SQUARES

## COFFEE AGAR GEL

### INGREDIENTS:

- Agar-agar (Gelling agent)
- Water (Solvent)
- Charcoal Powder (Colourant)
- Erythritol (Sweetener)
- Coffee Aroma (Aroma)

### TECHNIQUE:

Disperse agar + charcoal in cold water  
→ heat to 90°C until dissolved  
→ cool to 70°C  
→ add erythritol + coffee aroma  
→ cast in **silicone chess-board mould**  
→ refrigerate 20 min  
→ unmould

### OUTCOME:

- Deep, matte black tile, strong visual contrast to white squares
- Roasted, slightly bitter espresso note





# WHITE SQUARES

## MERINGUE AGAR GEL

### INGREDIENTS:

- Agar-agar (Gelling agent)
- Water (Solvent)
- **White colouring** (Colourant)
- Erythritol (Sweetener)
- **Meringue Aroma** (Aroma)

### TECHNIQUE:

Disperse agar + colourant in cold water  
 → heat to 90°C until dissolved  
 → cool to 70°C  
 → add erythritol + aroma  
 → cast in **silicone chess-board mould**  
 → refrigerate 20 min  
 → unmould

### OUTCOME:

- Firm, elastic, ivory-white tile
- Contrasts sweetly against the bitter black squares.
- Soft, vanilla-cream meringue flavour





# CHESS PIECES

## CARAMEL ISOMALT SHELL



### INGREDIENTS:

- Isomalt (Casting Base)
- Fondant (Viscosity Modifier)
- Caramel Aroma (Aroma)

### TECHNIQUE:

Melt isomalt + fondant

→ **heat to 160°C (pale set) or 175–180°C (amber set)**

→ cool briefly, add caramel aroma

→ cast into **silicone mould**

→ invert to drain, leaving a thin hollow shell

### OUTCOME:

- Shell with a crisp snap
- Two colour variants (pale gold / amber) used to imitate a real chess set
- Warm, buttery, caramel flavour





# CHESS PIECES

## SAFFRON PECTIN GEL

### INGREDIENTS:

- Water (Solvent)
- Amidated pectin (Gelling Agent)
- Citric acid (Acid Activator)
- **Red colouring** (Colourant)
- Erythritol (Sweetener)
- Saffron Aroma (Aroma)

### TECHNIQUE:

Premix erythritol + pectin

→sprinkle into simmering water while whisking

→activate with citric acid off-heat

→add aroma + colourant

→cool to 38–40°C

→pipe with a **syringe** into cooled isomalt shell

### OUTCOME:

- Soft, melting gel core with vivid red colour
- Warm, floral-spiced saffron note
- Flavour and texture contrast to the crisp caramel shell





# RESULTS AGAINST THE BRIEF

“REDUCE PRODUCTION COSTS AND TIME, REDUCE CALORIES, BUT MIND THE FLAVOUR”

| Element                   | Kcal      | Cost (€) |
|---------------------------|-----------|----------|
| White Squares (×8)        | ~3 kcal   | ~€0.49   |
| Black Squares (×8)        | ~3 kcal   | ~€0.4    |
| Chess Pieces – shell (×8) | ~186 kcal | ~€1.19   |
| Chess Pieces – filling    | ~5 kcal   | ~€0.57   |
| TOTAL (per serving)       | ~197 kcal | ~€2.67   |

-36%

Calories

197 kcal vs. 308 kcal

Erythritol (0,2kcal/g) and isomalt (2kcal/g) replaces sucrose

-93%

Sugar

5.1g vs. 69.4g

Due to the replacement of sugar

2.67€

Cost

Isomalt and Erythritol cost more per gram than sucrose

Mind the flavour

Contrast was designed in, not lost to substitution.

flavour

contrast (bitter vs. sweet)

texture

contrast (crispy vs. gel)

colour

contrasts (black vs. white, gold vs. amber)



# CONCLUSION



## WHAT WAS ACHIEVED:

- Four elements, built entirely from EU-approved molecular compounds (Reg. EC 1333/2008)
- 36% fewer calories, 93% less sugar vs. the conventional equivalent
- Assembly **under 10 minutes** once all components are pre-made

## MY STAR COMPOUND: ISOMALT

- Delivers the glass-like shell and crisp – without a single gram of caramelised sucrose
- A casting-temperature accident (160°C vs. 175–180°C) turned into the piece's defining **pale-gold/amber contrast**
- Carries the **highest cost and calorie share** of the dish – but also the most character





# THANK YOU

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