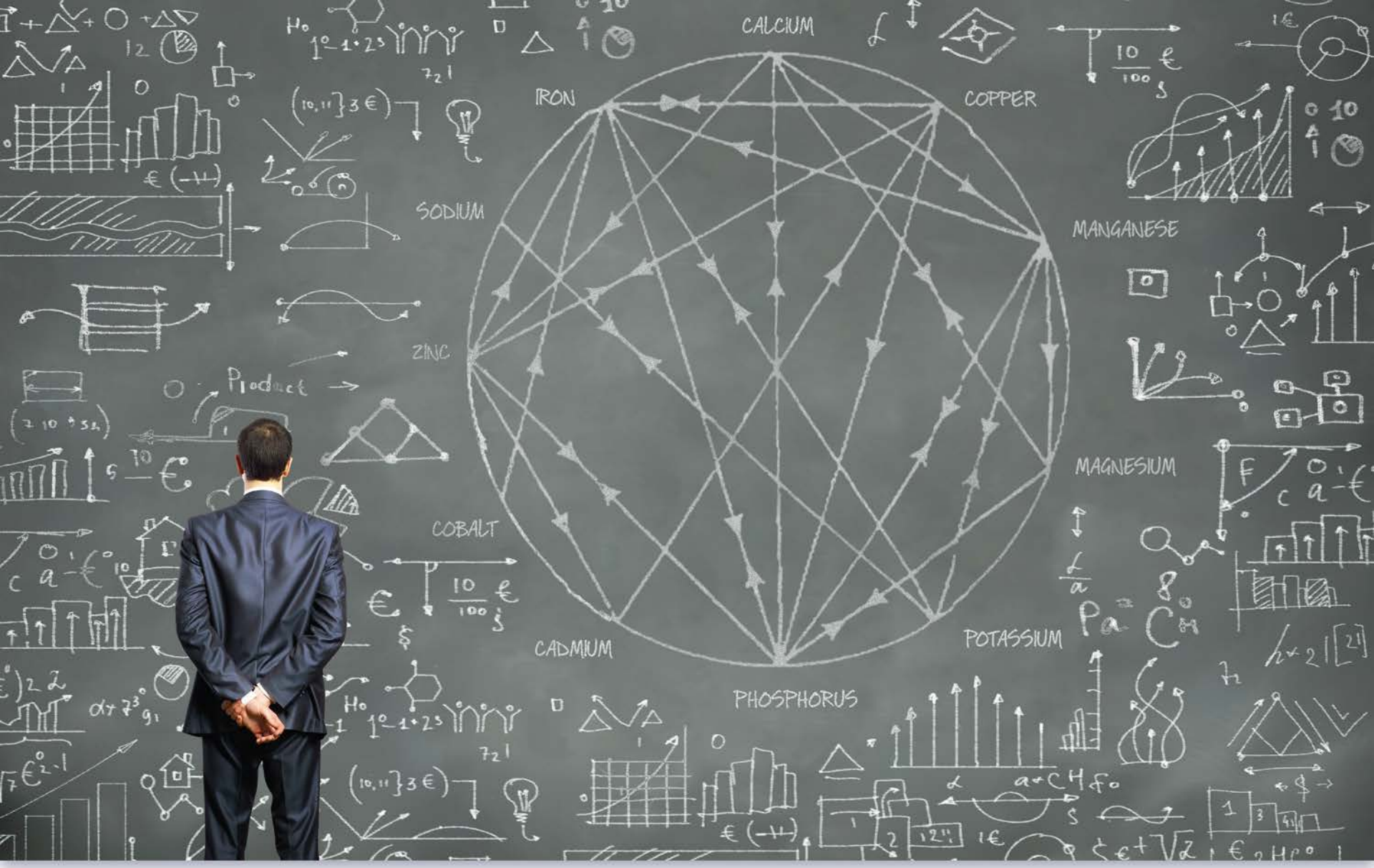

ALBION®
HUMAN NUTRITION

Building a Better Mineral

Science from the start

- Albion was founded in 1956 by pharmacist Harvey H. Ashmead.
- Albion works with researchers from around the globe.
- To date, Albion minerals have been examined in over 120 research papers, with 70 human clinical trials.
- Albion holds over 130 patents.

What makes a better mineral?

- Albion's decades of research have revealed 5 crucial parameters that make minerals more effective.
- More effective minerals are:
  1. Easier to absorb
  2. Easier to tolerate
  3. Stable and less reactive
  4. Safer than inorganic minerals
  5. Produced under high quality standards

Six-stage chelation process

Albion builds a better mineral in six stages.

1. Start with high quality raw materials.
2. Select quality organic ligands.
3. Use patented chelation and bonding technology.
4. Employ proven manufacturing processes.
5. Validate structure using FT-IR.
6. Continue research and development.

Albion builds a better mineral in six stages:

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organic ligands

Start with high quality raw materials

Start with high quality raw materials

- Albion does not use industrial or tech grade minerals.
- Even minerals widely accepted as food grade are not accepted by Albion.
- Albion materials are tested and guaranteed:
  - Kosher
  - Halal
  - Hypoallergenic
  - Non-GMO
  - Free from animal proteins restricted by FDA
  - Free from mollusks, lupines, gluten, celery & mustard
  - Low in heavy metal content

Select quality organic ligands

Select quality organic ligands

- Minerals can be chelated using any number of ligands.
- Absorption and metabolic properties of ligands vary considerably.
- Large ligand molecules must be broken apart and are difficult to absorb.
- Albion uses glycine for its TRAACS® line of bisglycinate amino acid minerals.
- Glycine is the right size and has the right molecular structure.
- When bonded with glycine ligands, Albion minerals are stable and easily absorbed.

Use patented chelation and bonding technology

Use patented chelation and bonding technology

- Chelation turns inorganic minerals into organic forms, so they can be absorbed and utilized.
- 1:1 chelation bonding processes are weak and unstable.
- Only Albion has a patented process for binding the ligands in 2 places (2:1 chelation).

Use patented chelation and bonding technology

- Full chelation requires a 2:1 ratio of organic ligand to mineral element.
- In addition, each mineral reacts with the ligands differently, requiring extensive research to achieve full bonding for each mineral type.
- Albion has multiple patents relating specifically to reaction bonding processes.

Employ proven manufacturing processes

Employ proven manufacturing processes

- Albion's manufacturing processes ensure consistent results.
- Common industry practices (dry blending and granulation) do not consistently produce fully reacted chelates.
- Full chelation requires proper chemical ratios and reaction conditions.

Employ proven manufacturing processes

- Albion’s controlled process involves spray drying a liquid formulation.
- Spray drying allows Albion to flash dry the product at the right moment in the chelation process.

Validate structure using FT-IR

Validate structure using FT-IR

- Albion pioneered the use of Fast-Fourier Transforming Infrared spectroscopy (FT-IR) for chelation validation.
- FT-IR technology measures the bonds and reveals whether both chelation bonds (2:1) are present.
- Albion tests each batch, guaranteeing that their TRAACS® minerals are fully chelated.
- *Without this test, manufacturers have no way to knowing whether a mineral is fully reacted.*

Continue research & development

Continue research & development

- Albion continues to lead research into the formulation and use of minerals world wide.
- In 2012, Albion nearly doubled its in-house research team.
- Albion understands the importance of mineral nutrition and strives to broaden this knowledge base.
- Albion has a cell lab for *in vitro* experiments.
- The cell lab and other research investments allows Albion to accumulate real-time data.

Continue research & development

- Albion participates with trade associations (CRN, IADSA).
- Albion works with foreign governments to develop regulatory structures and definitions for minerals.
- Albion's Science Advisory Board ensures that Albion's research supports global human health initiatives.

Thank you