NEXTCHEM

UNFOLD
STAMICARBON
15TH SYMPOSIUM 2026

ALL FERTILIZERS UNDER A SINGLE ROOF

BALLESTRA TECHNOLOGIES COMPLETE NEXTCHEM PORTFOLIO

FOCUS ON NITRATES

MASSIMO GORI
BU DIRECTOR CHEMICALS – BALLESTRA S.P.A.

AGENDA

01 BALLESTRA COMPLEMENTS STAMICARBON PORTFOLIO

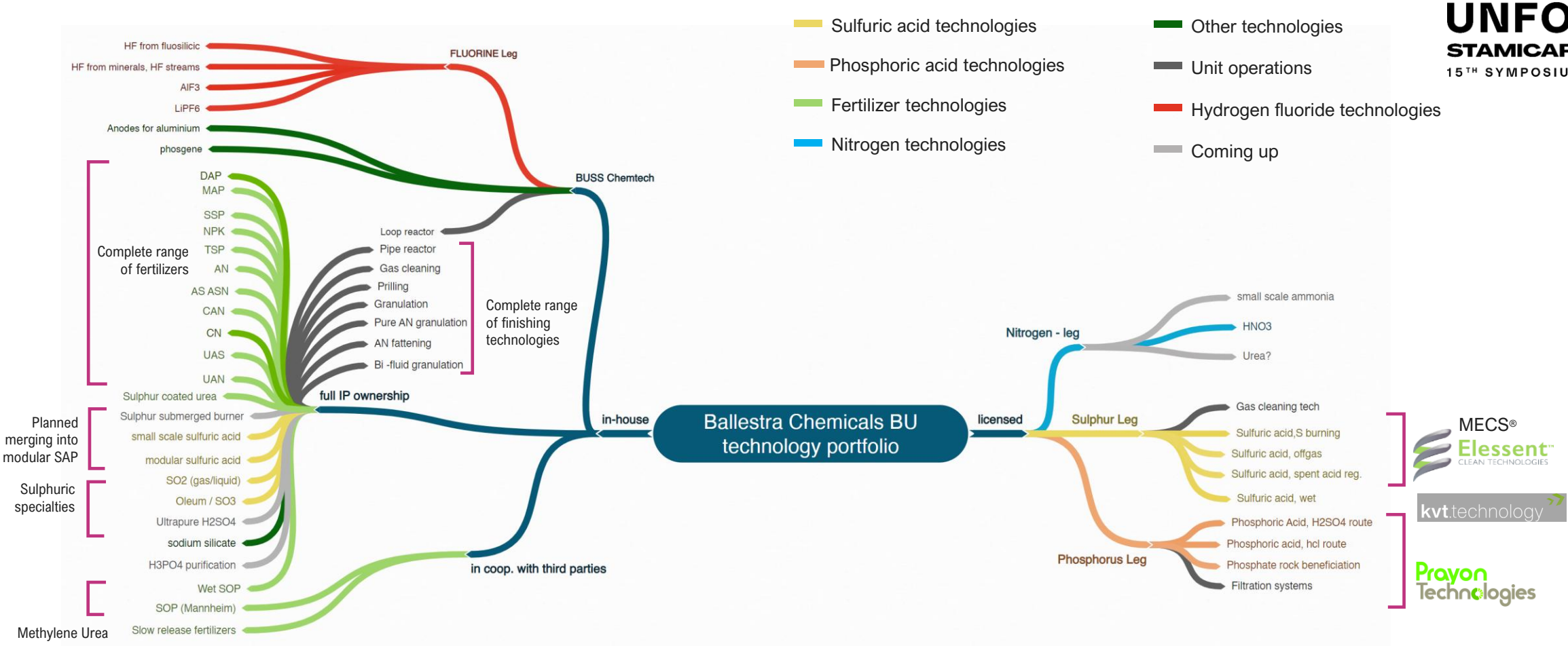
02 THE BALLESTRA AN / CAN PROCESS

03 THE BI FLUID DRUM GRANULATOR

04 CONCLUSIONS

BALLESTRA AND INORGANIC CHEMISTRY

UNFOLD STAMICARBON 15TH SYMPOSIUM 2026



Licensed by Ballestra

Licensed through Ballestra

ALL FERTILIZERS UNDER ONE ROOF

UNFOLD STAMICARBON 15TH SYMPOSIUM 2026

STAMICARBON

Ammonia | Urea | Nitric acid | UAN | AN melt

ballestra

Sulphuric acid | Phosphoric acid

Potassium Sulphate

MAP | DAP | NPK | SSP | TSP | UAS

AN melt | CAN | CN | AS | ASN

→ AN Finishing

BALLESTRA and Stamicarbon together cover ALL the Nitrogen, Phosphorus, and Potassium fertilizer technologies and more

Ballestra brings the missing step to Stami AN

ALTERNATIVE OPTIONS FOR AN MELT SECTION

UNFOLD STAMICARBON 15TH SYMPOSIUM 2026

STAMICARBON

FORCED CIRCULATION LOOP

- Simple and compact design
- Slightly overpressurized loop for stable operation
- Low circulation temperature, minimizing explosion risk
- Aerosol-free operation ensuring clean condensate without a scrubbing system

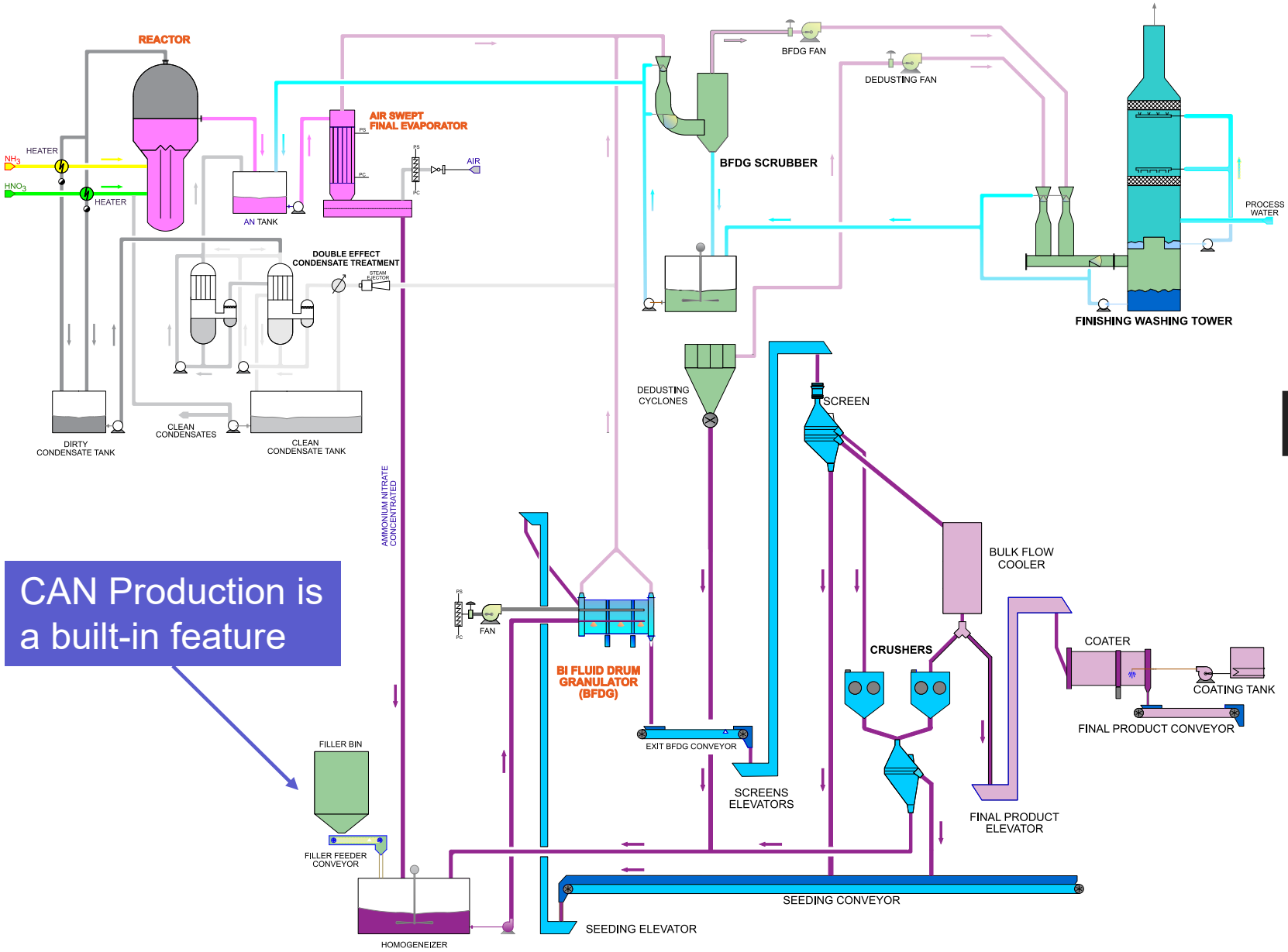
ballestra

NATURAL CIRCULATION LOOP

- Proven and safe operation – no machines in the loop
- High product concentration
- Steam export for further uses
- Stable operation, fine tuned with pH control with Ammonia
- Wide turndown range

UNFOLD STAMICARBON 15TH SYMPOSIUM 2026

BALLESTRA AN/CAN PROCESS



CAN Production is a built-in feature

THE PN REACTOR AND CONDENSATE CLEANING

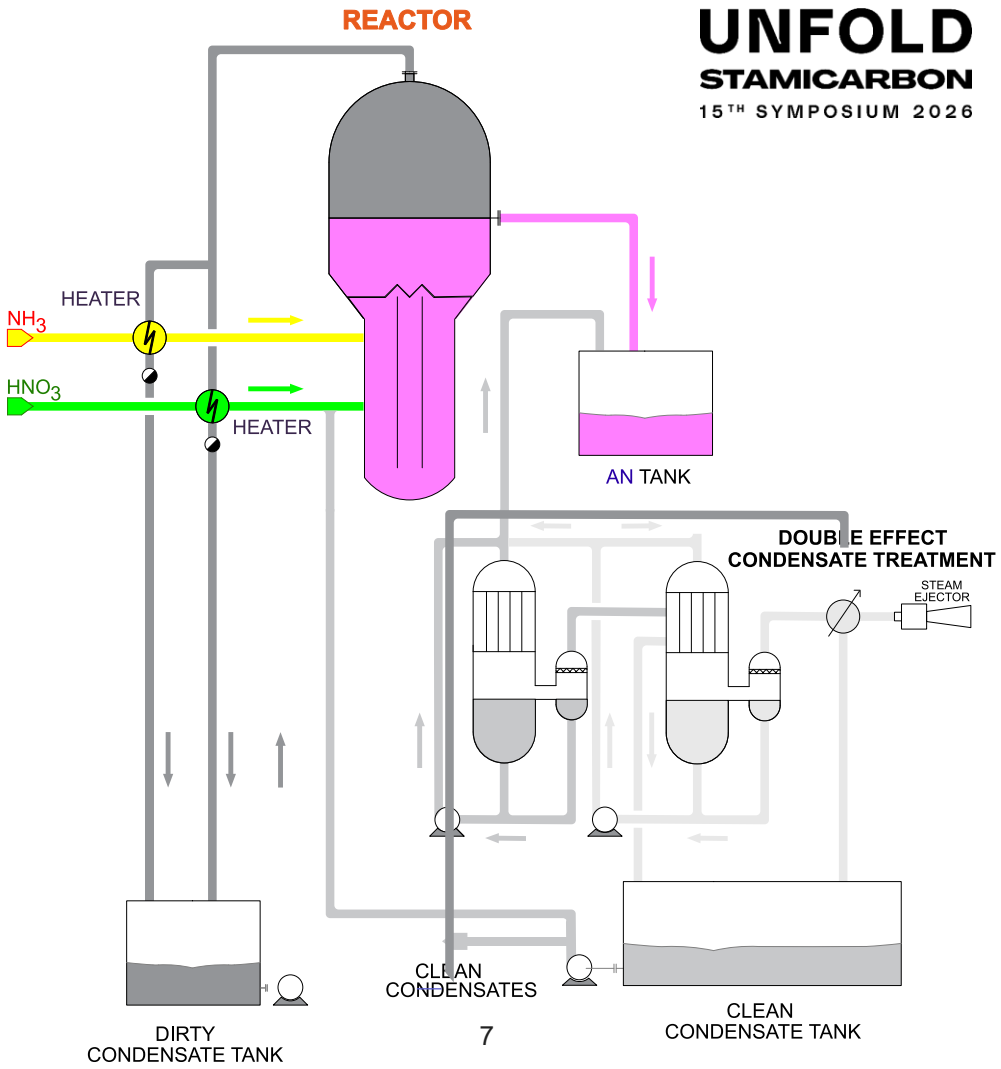
UNFOLD STAMICARBON 15TH SYMPOSIUM 2026

Pressure neutralizer reactor

- Natural circulation induced by the AN formation reaction
- Proven and safe operation (no machines in the loop)
- High product concentration
- Exports steam for further uses
- Stable operation, fine tuned with pH control with ammonia
- Wide turndown range
- Standard MOC is stainless steel, no expensive exotic materials

Double effect condensate treatment

- Fully integrated double effect condensate cleaning
- No steam import, system runs with vapor from PN reactor
- **Simple. Safe. Time tested.**



AIR SWEPT EVAPORATOR AND GAS TREATMENT

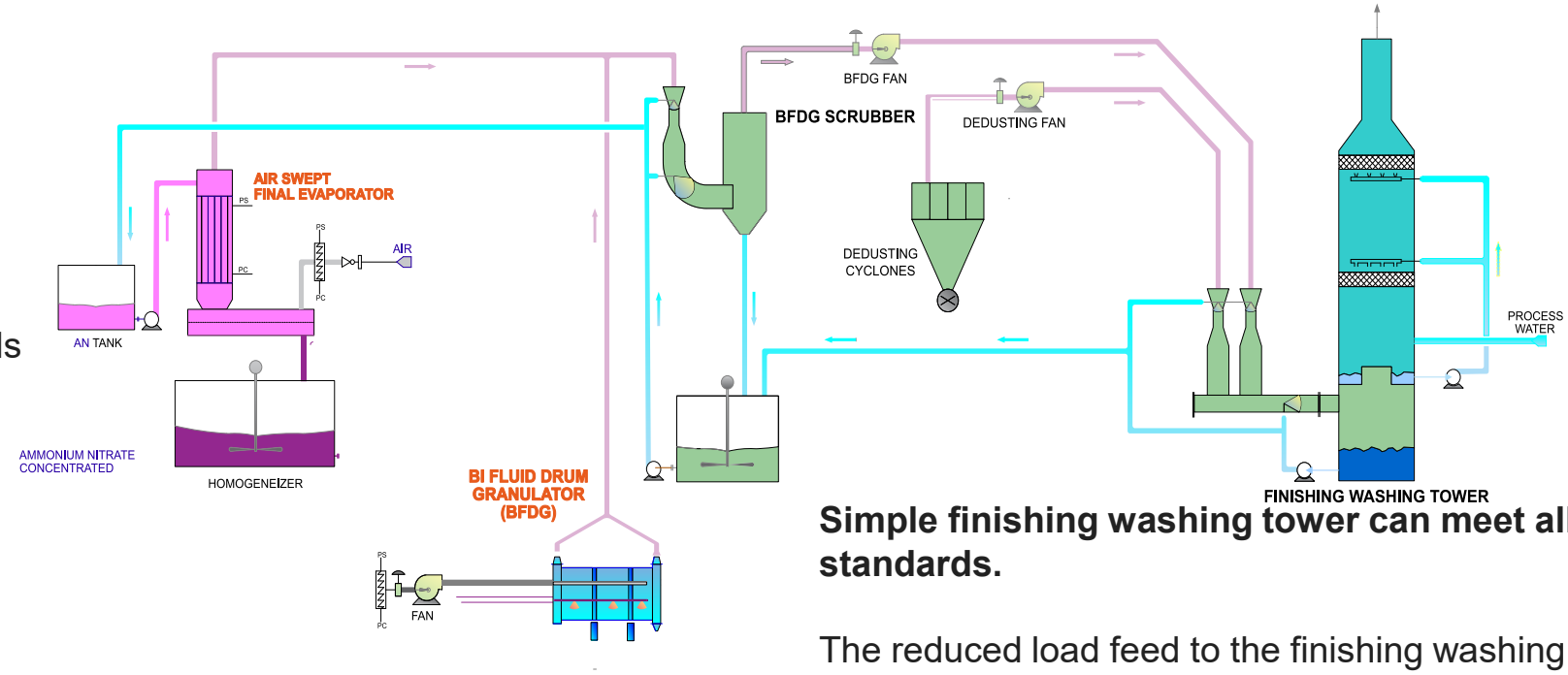
UNFOLD STAMICARBON 15TH SYMPOSIUM 2026

Air swept evaporator

- In the air swept evaporator, a gentle air flow takes water away from the AN melt, which is kept below boiling temperature.
- Extremely safe operation is assured
- Market leading AN melt concentration (99%+)
- Highest concentration equals smallest granulation system downstream!

Dedicated gas treatment for tougher streams

Entrainments from the air swept evaporator and dust from the BFDG are treated and removed prior of feeding the finishing washing tower, to minimize size and consumptions.



Simple finishing washing tower can meet all international standards.

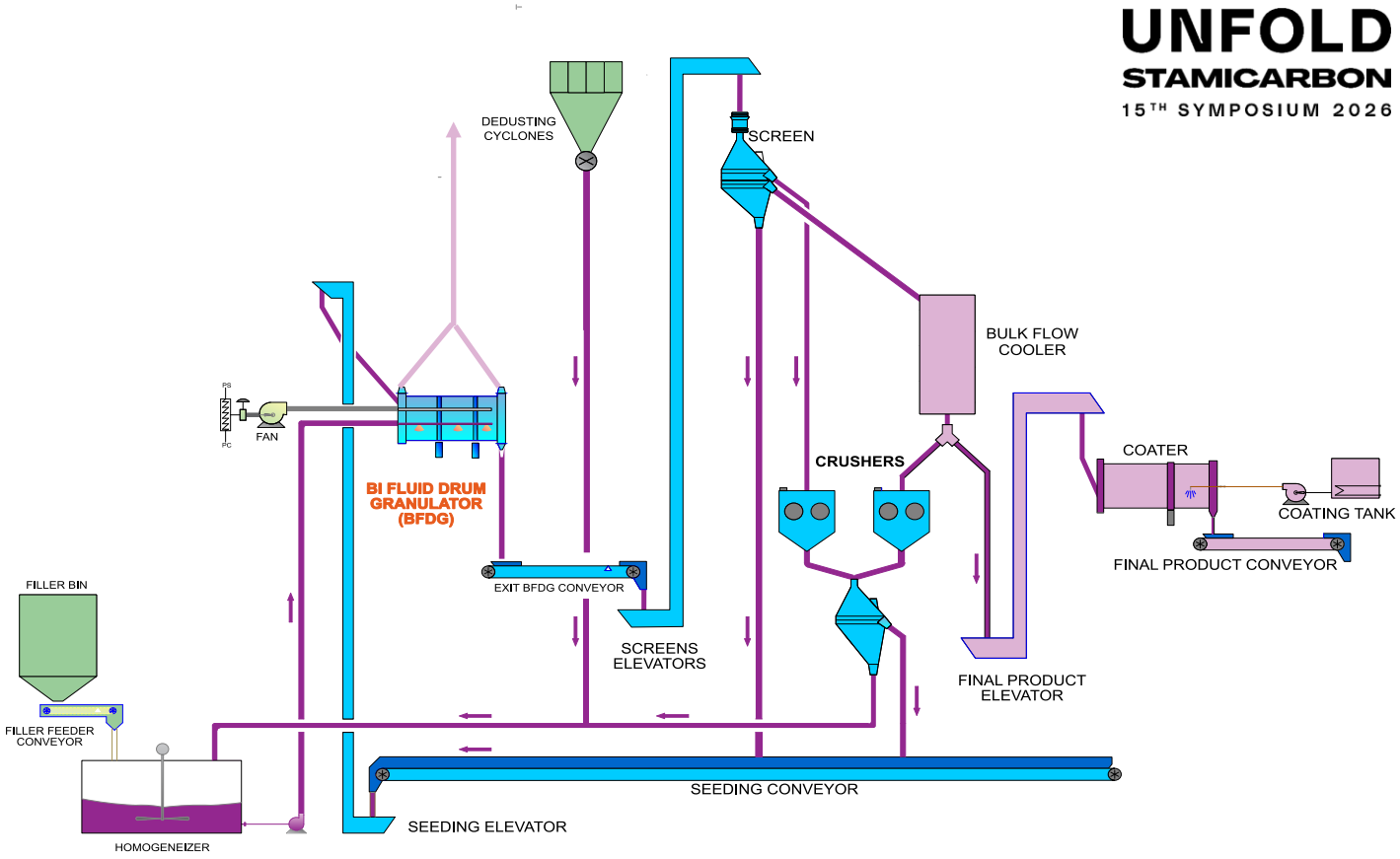
The reduced load feed to the finishing washing tower ensures minimum CAPEX and OPEX for meeting any international standard

UNIQUE AN/CAN GRANULATION TECHNOLOGY

UNFOLD STAMICARBON 15TH SYMPOSIUM 2026

Bi Fluid Drum Granulator (BFDG)

- Ballestra's unique BFDG, combined with best in class AN concentration allow to design compact, reliable and efficient granulation plants
- Modern CFD designed proprietary atomizers
- Nozzle cleaning and maintenance can be performed without stopping the granulator
- Tight control on granulation parameters ensures best in class granule properties
- Industrial scale pilot BFDG is available in Ballestra R&D premises for product demonstrations.



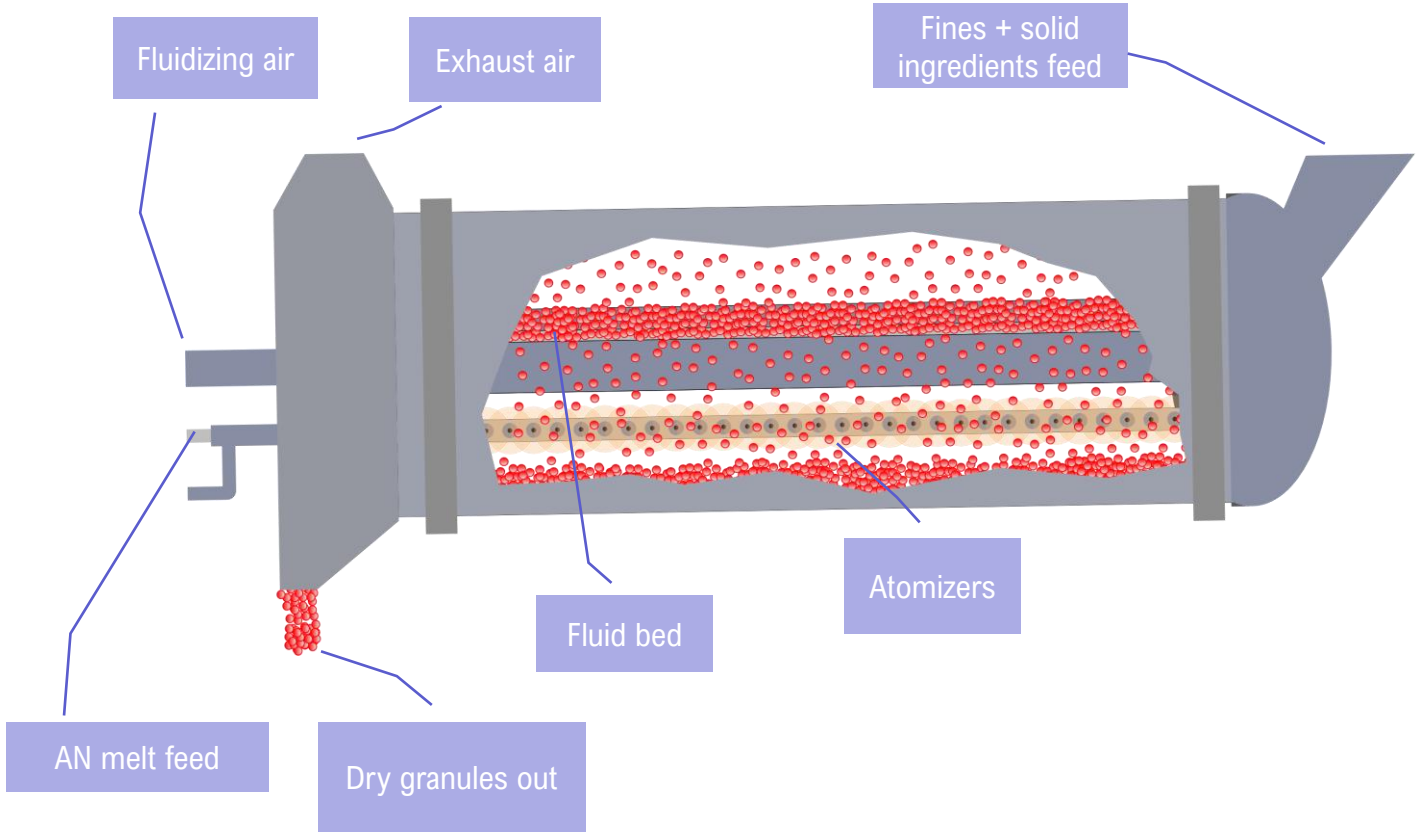
BALLESTRA BFDG recycle ratio is 1:1

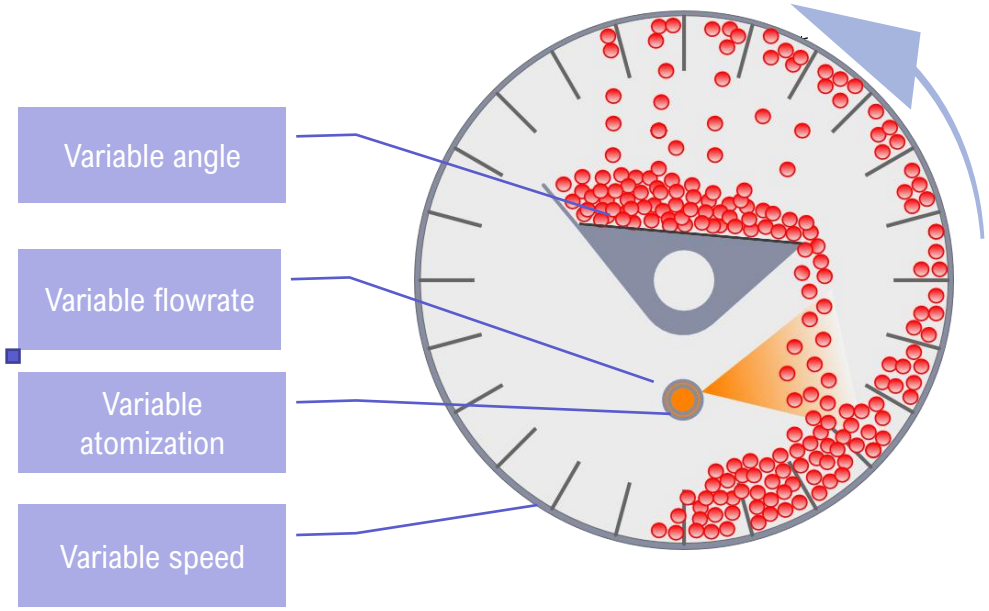
- Competing technologies recycle ratio is typically 3:1 to 6:1.
- Hence Ballestra's design is significantly smaller and brings CAPEX and OPEX advantages

THE BI FLUID DRUM GRANULATOR

UNFOLD STAMICARBON 15TH SYMPOSIUM 2026

- The rotating drum lifts granules onto a fluid bed table which is slightly sloped.
- Fluidizing air dries granules.
- The “curtain” of granules falling from the table is invested by the fluid sprayed from the nozzles, thus forming a new layer.

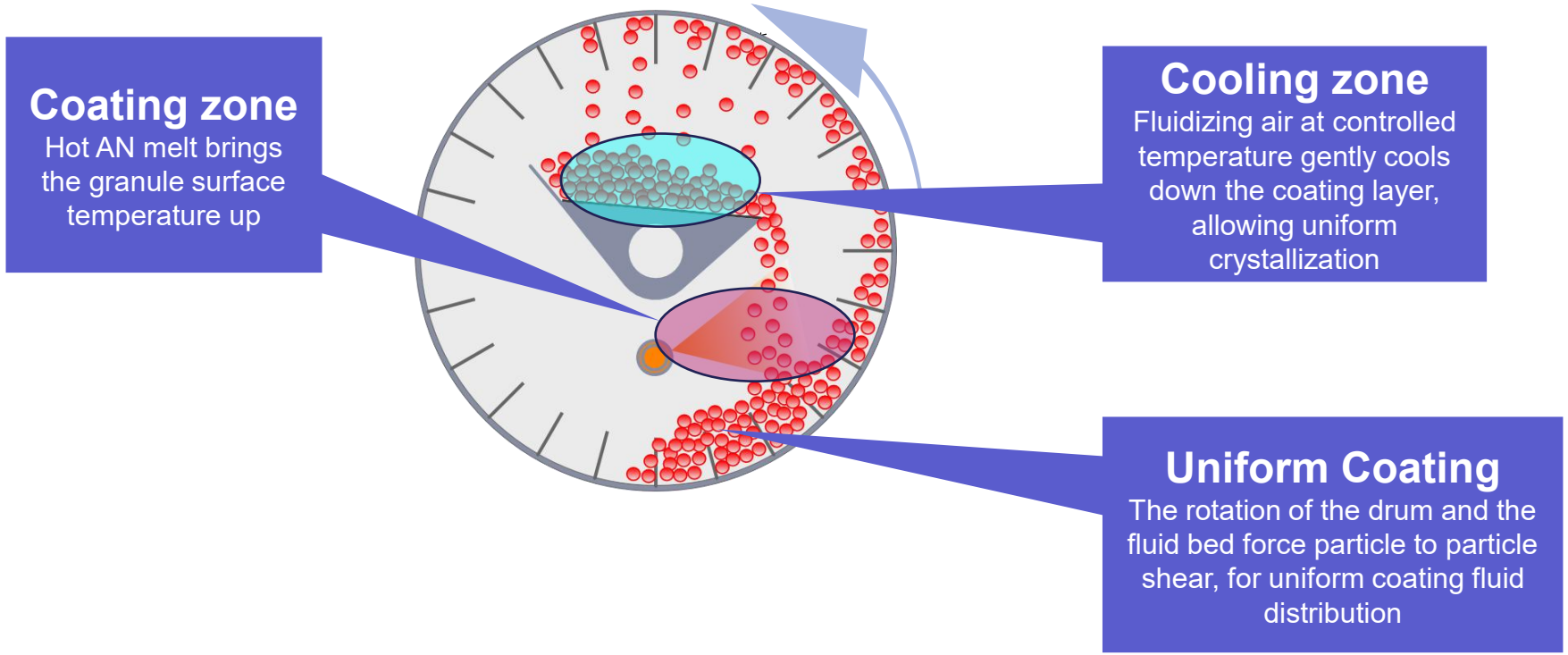




UNIQUE THERMAL CYCLE INSIDE GRANULATOR

UNFOLD STAMICARBON 15TH SYMPOSIUM 2026

The key principle behind the flexibility of the Ballestra Bi Fluid Drum Granulator is the possibility to submit each granule to precisely defined thermal cycles

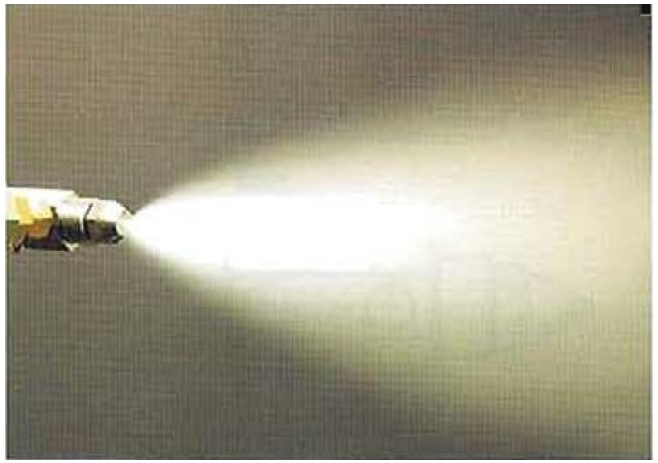


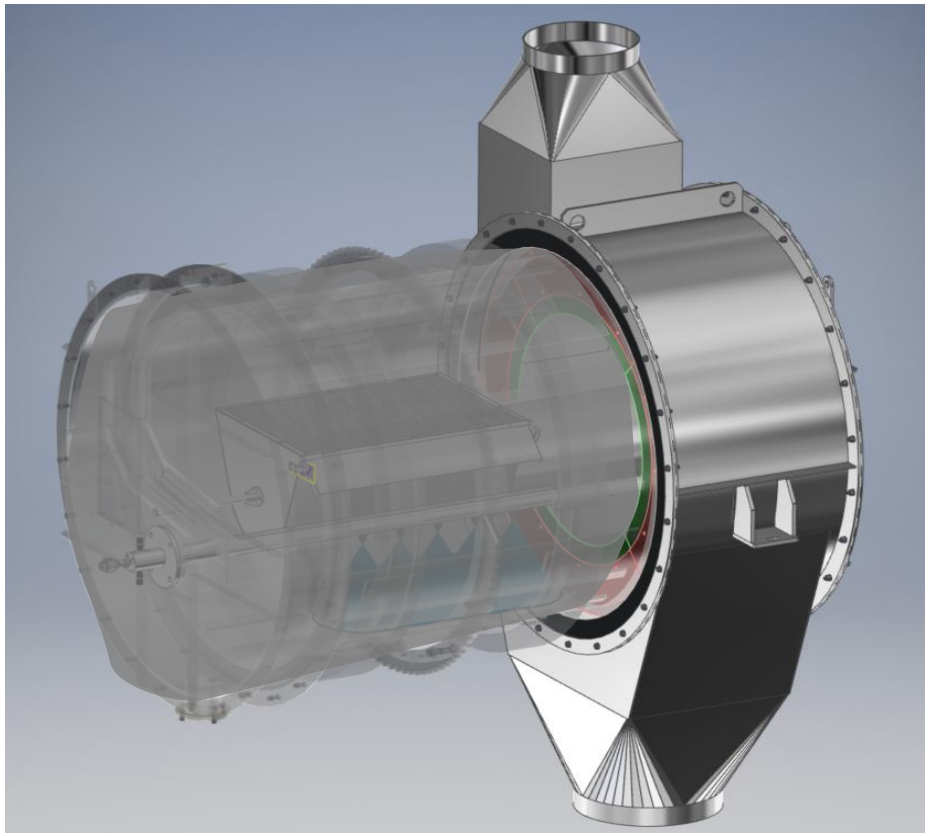
R&D IS THE MAINSPRING OF OUR TECHNOLOGY

UNFOLD STAMICARBON 15TH SYMPOSIUM 2026

BI FLUID DRUM GRANULATOR. INDUSTRIAL PILOT

- Fully instrumented, DCS controlled, complete with gas treatment
- Granulation Capacity about 1000 kg/hr
- Flexible set-up – the system can be configured also for :
  - Sulphur Coated Urea
  - Urea Fattening
  - Methylene Urea
  - Methylene Urea Coated Urea
  - Micronutrients and NPK granules





CONCLUSIONS

UNFOLD STAMICARBON 15TH SYMPOSIUM 2026

Completing the AN/CAN chain
Ballestra offering complements Stamicarbon technologies with top class AN final concentration and granulation

Safety first
Ballestra's AN/CAN technology builds on the proven process route that safely covers almost 50% of the world production. No surprises.

Avoidance of machines in reaction loop and reliance on easily controllable parameters keep the plant away from explosion hazards

Minimizing CAPEX
Accurate selection of operating conditions and plant parameters avoid exotic material of construction
Top class efficiency shrinks the unit to a bare minimum

Minimizing OPEX
The absence of thermal energy inputs and the small flowrates in granulation guarantee minimum OPEX

Easy maintenance
Ballestra carefully avoided high speed machinery in delicate positions such as the reaction loop and focused on a sturdy and reliable approach.

A key maintenance operation such as the cleaning of Ballestra high tech nozzles of the BFDG can be performed without stopping the plant.

Talk to us

Contact Ballestra or Stamicarbon for your optimized N, P or K fertilizer solution.

NEXTCHEM
MAIRE Sustainable Technology Solutions

STAMICARBON

THANK YOU

QUESTIONS?