Desmet Ballestra - Mazzoni LB

Leading Process Plants Technologies for Soap Production

Detergents
Surfactants
Soap &
Chemicals

desmet ballestra

MAZZONI LB
SINCE 1946

Science behind Technology

www.desmetballestra.com

LEADING SAPONIFICATION TECHNOLOGIES

Continuous Saponification Plants

Mazzoni first introduced the Continuous Saponification Plants during early ’50.
Since its first installation during 1956, approx. 500 units have been installed all over the world with a market share superior to 85%.
Two solutions are available:

- SCTU continuous SWING (Soap With INside Glycerin) saponification - DFA neutralization
- SCNT-N Neutral Oils continuous saponification plant with glycerin recovery

The availability of top-quality raw materials and the reduced market price of glycerin make the SCTU process the preferred technology.
SCTU plant can be converted into a SCNT-N plant adding the glycerin recovery section.

SCTU-C Integrated saponification-vacuum dryer

The most advanced technology today proposed by Mazzoni: integrated SCTU saponification and “C” dryer granting superior efficiencies, maximum flexibility and lowest manufacturing costs for both laundry and toilet soaps.

FROM FATS… | TO SOAP… | ONLY FEW MINUTES

VACUUM DRYERS

Vacuum drying technology has been introduced by Mazzoni during the late ‘40.
Since its first installation during 1949, approx. 1200 units have been supplied all over the world with capacities from 500 to 15.000 kg/h.
The unique “NO SPRAY” technology make our dryers the friendliest to the environment solution today available. More than 130 units installed during the last few years!

SCTU Universal saponification/neutralization plant

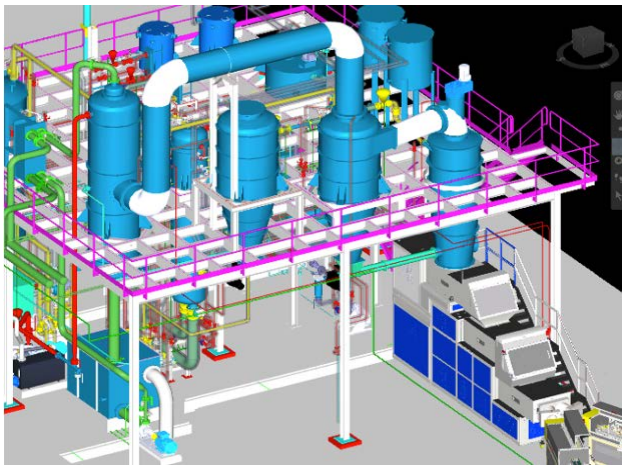
SCTU is a universal saponification/neutralization process to produce:

- SWING (**S**oap **W**ith **IN**side **G**lycerine) liquid soap from neutral oils-fats
- DFA liquid soap from Fatty Acids neutralization.

INTEGRATED SCTU-C PLANT

SCT-U saponification is directly connected to the “C” vacuum dryer for toilet/laundry soap production allowing impressive production costs cut with highest efficiencies and maximum flexibility.

PERFECT PLANT innovative design granting the most logical ergonomic set up with minimal installation area required, best piping/cable route, easiest operation. The perfect plant layout permits adding at any time additional devices such as liquid/powder fillers dosing systems, superfatting agents, glycerin, dyes dosing systems the formulas may require without any space constraint nor layout modification.



SCTU-C INNOVATIVE SOLUTIONS:

- “UNIVERSAL SAPONIFICATION LOOP: the TFM in liquid soap is adjustable between 55 and 71%
- “ZERO EFFLUENT”
- “THRIFTY TECHNOLOGY” with ompressive production costs cut
- ”REDUCED MAINTENANCE COST”
- ”REDUCED INVESTMENT COST FOR AUXILIARY UNITS”

UNIVERSAL SAPONIFICATION LOOP

Universal Saponification Loop allowing to produce liquid neat soap with **TFM 55-71%**, thus reducing the utilities requirement for final soap drying to any moisture both for laundry and toilets soap chips/bars.

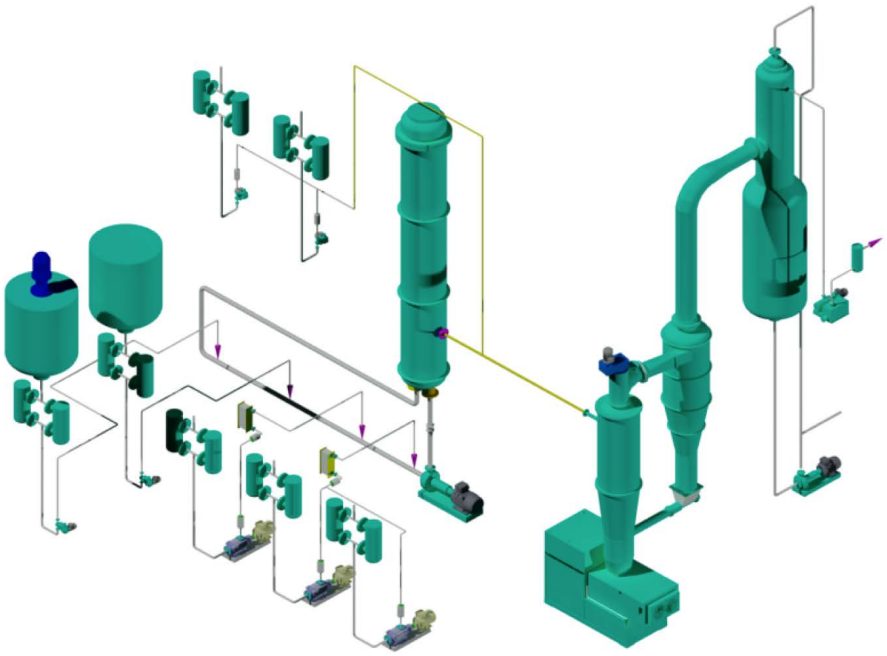
The saponification loop is composed by:

- Multi-head centrifugal dosing pumps via mass-flow meters and proportioning valves
- Proprietary design centrifugal recirculating pump with inbuilt pre-mixing unit
- Multi-tube static tubular reactor

"FULLY INTEGRATED DESIGN"

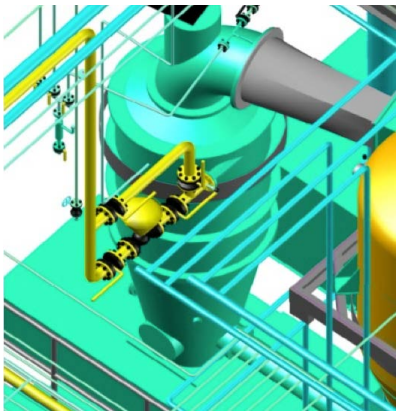
Minor Additives (superfatting agents, preservatives etc.) and Fillers (talc, silicate etc.), are injected in the Reaction loop and/or before the Vacuum Chamber:

- NO NEED TO BREAK PROCESS
- NO NEED FOR INTERMEDIATE CRUTCHERS



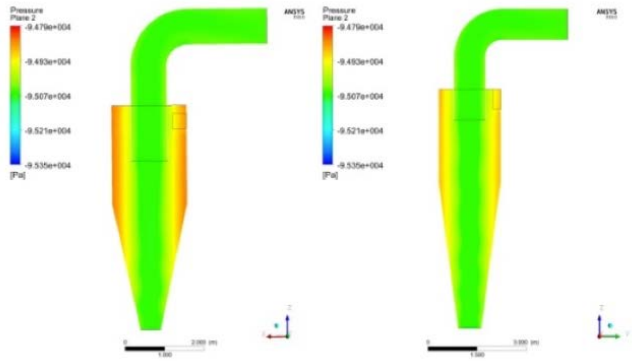
NO SPRAY VACUUM CHAMBER

Negligible soap fines formation during the drying process thanks to the special design of the liquid soap injection system. 50% soap fines reduction is expected during drying process.



NEW DESIGN DUST RECOVERY SYSTEM

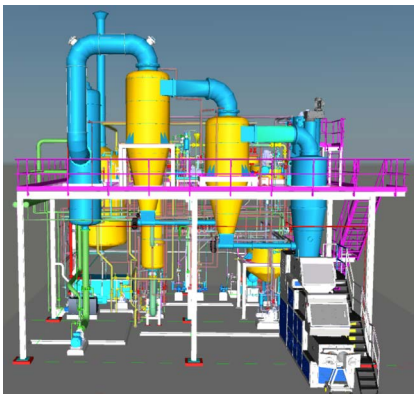
Super efficient dust recovery system thanks to the innovative design of the cyclones: the vapors velocity inside the cyclones grants the optimal separation air/fines with negligible fines carryover to the barometric group.



SEMI-BAROMETRIC CONDENSER With "ICS" INDIRECT COOLING SYSTEM

The condensation of the vapors liberated during the drying process is obtained by a semi barometric condenser:

- No need of barometric structure
- Condensed vapors recovery back to saponification



THRIFTY TECHNOLOGY

Lowest electric power requirement

SCTU-C plant grants the lowest electric power consumption vs. any other technology available in the market thanks to:

- STATIC TUBULAR REACTOR
- NO TURBODISPERSERS
- CENTRIFUGAL LOOP RECYCLE PUMP

Electric power consumption reduced down to 20-25 kW/ton depending on dryer plant configuration (simplo/duplo/triplex plodder)

Negligible steam consumption

No need of process steam during saponification and drying operations.

Minimal steam required only for raw materials pre-heating from storage tanks.

Laundry soap:

NO BOOSTER required: the vacuum is generated by chilled water granting the most accurate vacuum level with all soap formulas (pure soap, filled soap).

REDUCED COOLING TOWER DUTY: no booster motive steam to be condensed

Toilet Soap:

NO HEAT EXCHANGERS: Liquid soap is dried to the final moisture without additional heating.

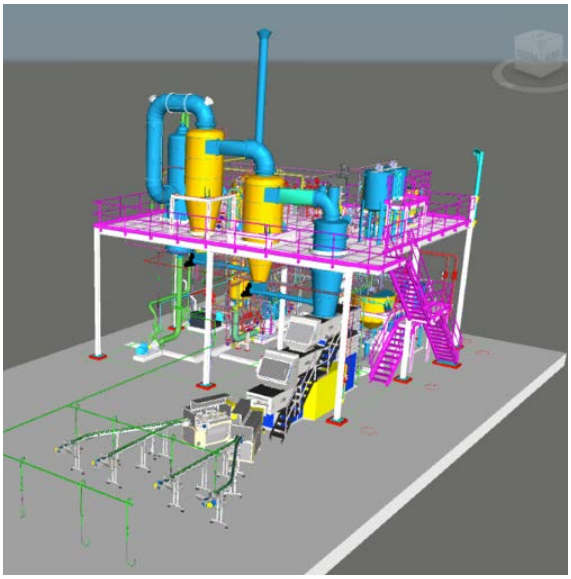
REDUCED COOLING TOWER DUTY: the possibility to adjust the liquid soap TFM as close as possible to the final desired moisture dramatically reduces the barometric water to condense the vapors liberated during the drying process.

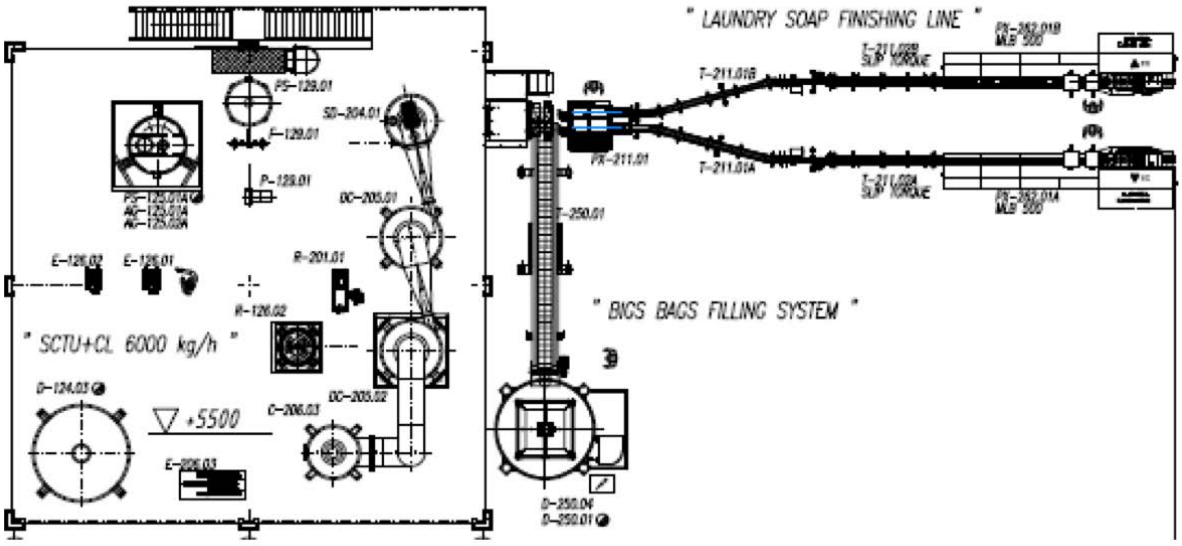
Integrated laundry bars process plants and finishing lines

The innovative «Perfect Plant» design allows producing both laundry soap bars and/or toilet soap chips with a simplifed plant configuration.

The plodder positioned under the vacuum chamber is designed to extrude laundry bars which are in-line cut to size, engraved and packed. Duplo/triplex plodders are available depending to the final soap characteristics (opaque, semi-translucent, additivated).

Minor ingredients such as perfume and color are added by dosing devices in the plodder preliminary stage.





Mazzoni flowpack wrapping machines suitable to wrap short/long bars are available for speeds up to 300-350 bpm.

No Spray Vacuum Chamber

"NO SPRAY" vacuum chamber, with tangential liquid soap injection.

A revolutionary solution to dry the soap vs. conventional Spray Nozzle system offered by the Competitors:

- Easy operation: soap pressure injection adjustable by a pressure valve outside the chamber vs. conventional atomizers with interchangeable nozzles
- Reduced soap fines formation: expected fines reduction up to 50% vs. conventional Atomizers
  - Minimal fines entrainment: pre-cyclone vacuum chamber design
  - Improved soap chips quality with reduced gritness
  - Overall equipment simplification (one only mechanical seal for vacuum) with consequent reduced maintenance

Three models are available to cover all manufacturing capacities up to 15.000 kg/hr toilet and laundry soap:

- NS 1000 up to 4.000 kg/hr
- NS 1250 up to 7.000 kg/hr
- NS 1500 up to 15.000 kg/hr

The NO-SPRAY Vacuum Chamber is retrofittable in existing drying plants.

“SCNT-N” Neutral Fats/Oils Continuous Saponification with Glycerine Recovery

Fourth generation continuous saponification of neutral oils designed to optimize process/performances:

FLEXIBILITY

Minimal holding time allowing:

- reduction of the size of critical equipment (reactor, flash cooler etc.)
- simplified and fast the formulas changeover

VERSATILITY

SCNT plant is suitable to handle the most common raw materials from vegetable and animal sources.

ENERGY SAVING

Innovative design with heat recovery system allows producing neat soap with a consumption as low as 70 kg of steam per ton of soap.

ENVIRONMENT

The plant environmentally friendly: no effluents are produced.

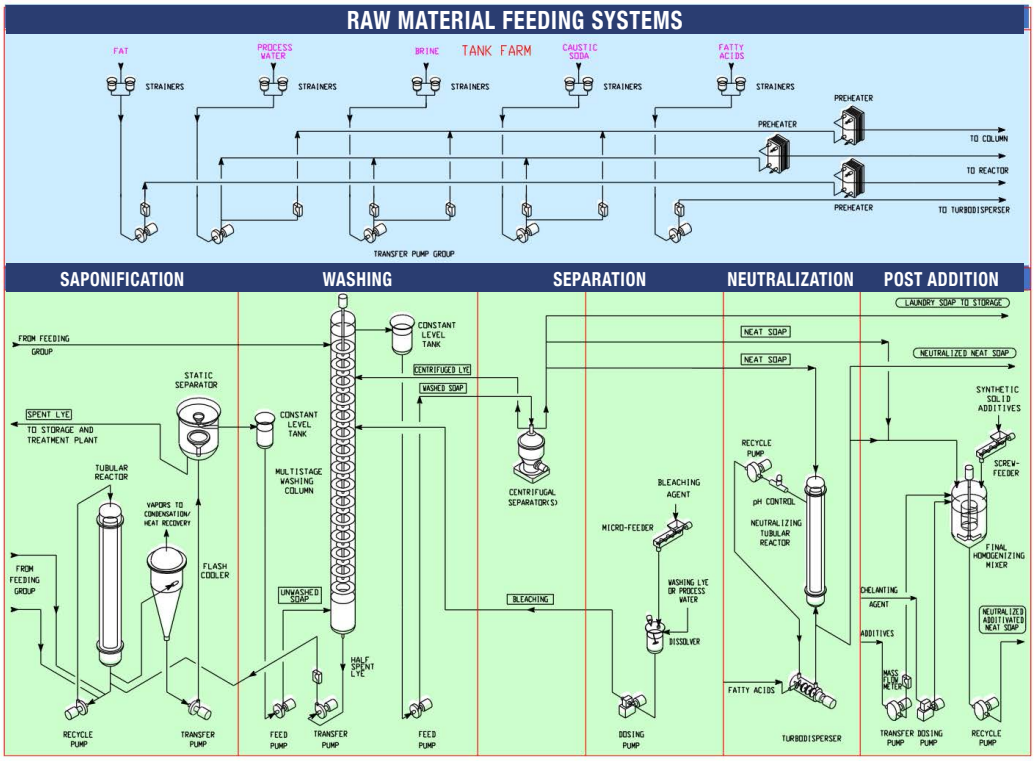
REDUCED MAINTENANCE

Static reactor and flash cooler: no maintenance requirement vs. competitor’s technology with agitated vessels.

REDUCED AREA REQUIREMENT

The new design minimizes the space required for installation.

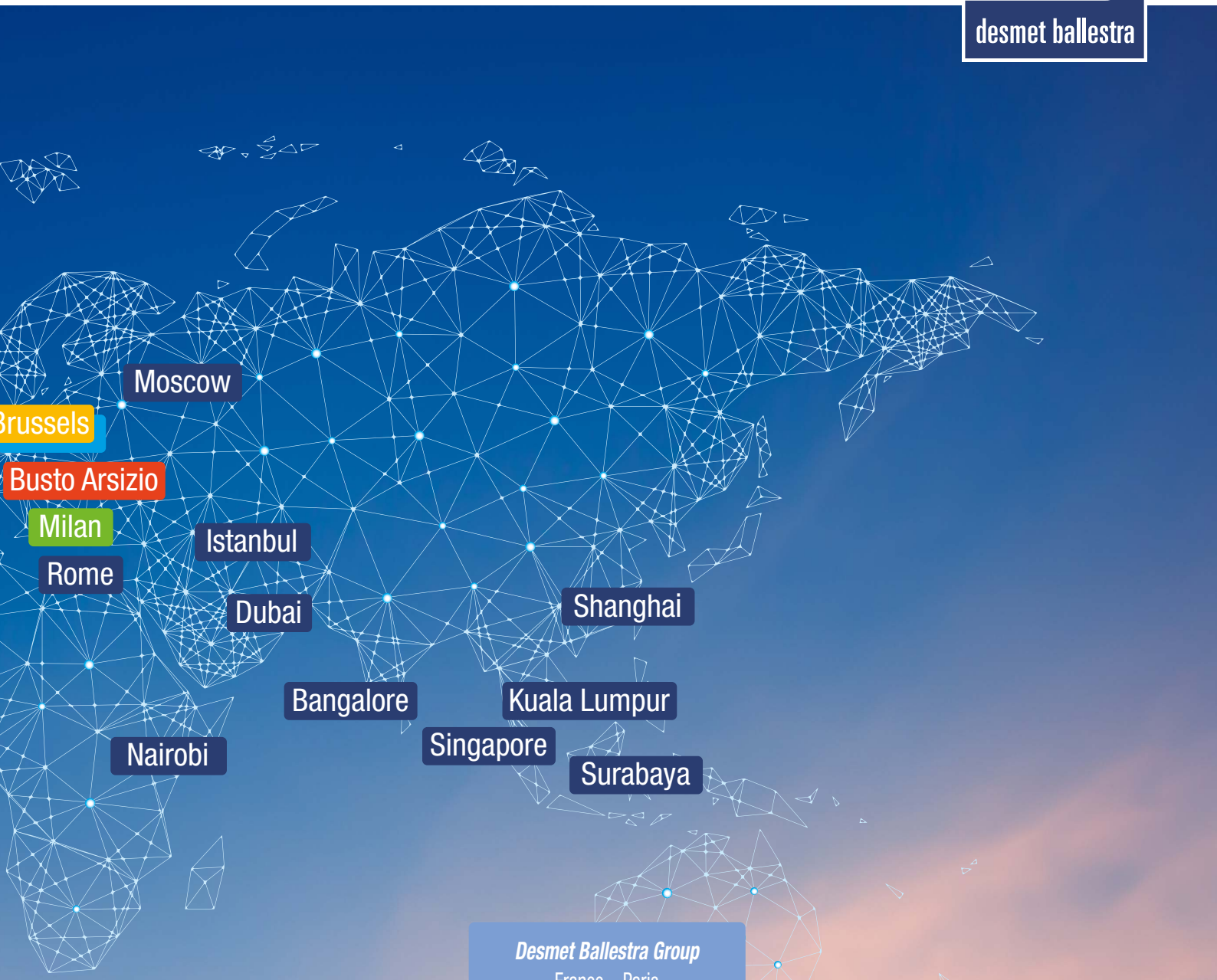
SCNT-N plant can be converted into SCTU plant: the saponification reactor can be directly linked to the vacuum chamber of the drying plant.



Worldwide close to you

Technical innovation and privileged customer relationship are the keys of the strategy of the Desmet Ballestra Group that is able to provide to customers the latest technologies trough a fully integrated international network of companies.

desmet ballestra



Desmet Ballestra Group
France – Paris

FOOD & FEED	CHEMICALS FOR LIFE
Desmet Ballestra Oils & Fats Belgium – Brussels	***Desmet Ballestra Oleochemicals & Biodiesel*** Belgium – Brussels
Desmet Ballestra Rosedowns United Kingdom – Hull	***Desmet Ballestra Detergents Surfactants & Chemicals*** Italy – Milan
Desmet Ballestra Stolz France – Wailly Beaucamp	***Desmet Ballestra Mazzoni LB Soap*** Italy – Busto Arsizio

www.desmetballestra.com

Detergents
Surfactants
Soap &
Chemicals

desmet ballestra

MAZZONI LB
SINCE 1946

Science behind Technology

www.desmetballestra.com

North America Agent
Neil A Burns LLC
Freehold, NJ 07728
+1 (732) 688-9585
www.neilaburns.com
neil@neilaburns.com