

Packaging Stylist

Houses of **TAEJIN**

“Packaging Stylist”

- ✓ **Future company**, through the development of technology
- ✓ **Leading company**, through the customer satisfaction
- ✓ **Knowledge company**, through the cultivation of human resource
- ✓ **Exemplary company**, through the stable management

History

Ever since establishment in 1977, TAEJIN has been producing plastic components in various goods including cosmetics and households goods.

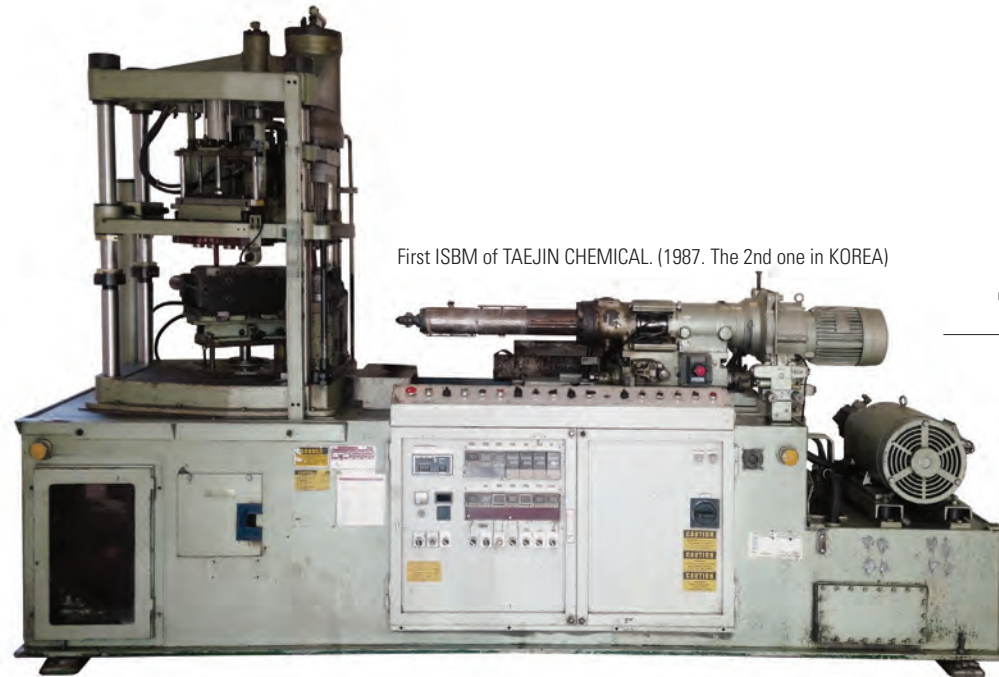
We specialize in plastic injection molding and offers customized packaging from concepts, design, to finished products.

TAEJIN company, a leading manufacturer of quality cosmetics, provides high quality services in containers of cosmetics.

Also our investments for the best quality bring more customer satisfaction.

In addition, our devotion in employee training and education augment our product quality as well.

We will continue to make worldwide customer satisfaction our number one priority, help to provide cosmetics containers that enrich the senses.



First ISBM of TAEJIN CHEMICAL. (1987. The 2nd one in KOREA)

1977

> TAEJIN company established.

1996

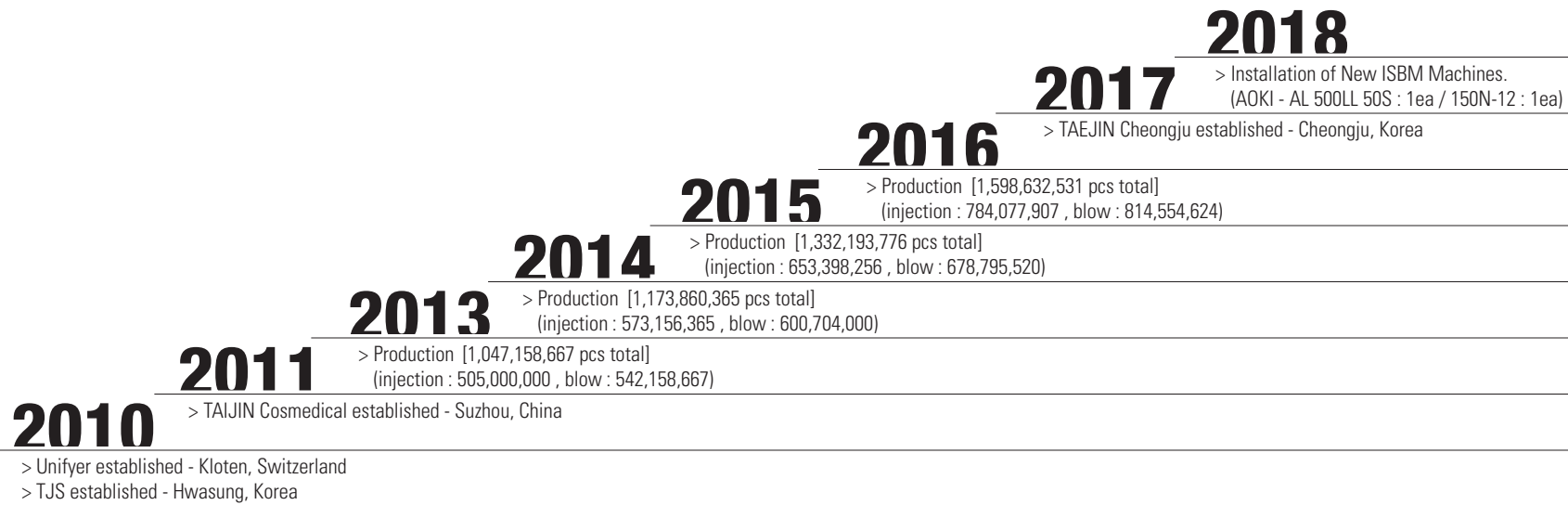
> TAEJIN Chemical Co., Ltd. established.

2001

> Clean Room facility installed.
> IN-LINE SYSTEM installed (printing and labeling).

2002

> Clean Factory label (Ministry of Labor,
Korean industrial safety industrial complex)
> I.S.O 9001:2000 Certification.



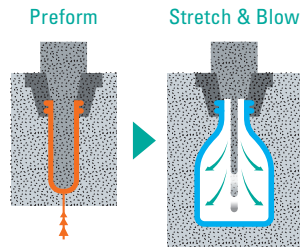
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					• Injection overmolding Blow
					• Insert Injection
					• Pouch Airless

The way to produce

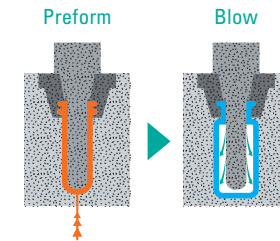
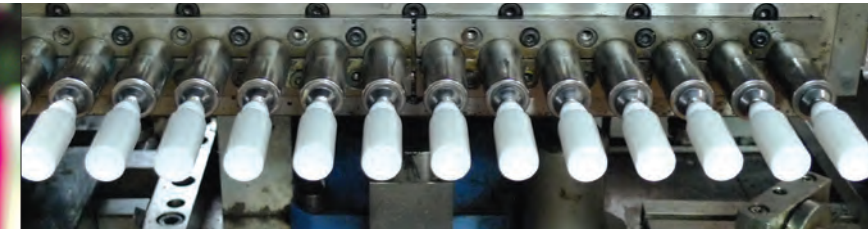
1/ Injection Stretch Blow Molding

We have 3 & 4 Station Machines in ISBM.

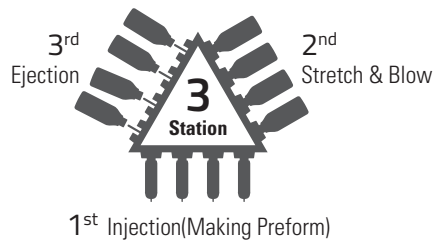


2/ Injection Blow Molding

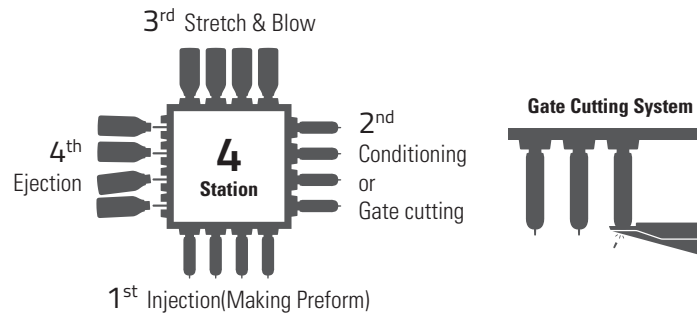
Compare with ISBM, IBM machine produces bottle without stretch station.



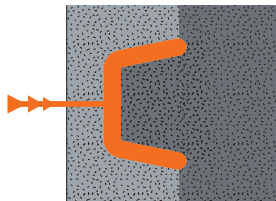
3 station ISBM Machine - AOKI



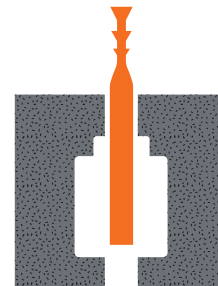
4 station ISBM Machine - NISSEI ASB



3 / Injection Molding



4 / Extrusion Blow Molding



We have...

Pilot M/C



Mold repair facility



P.C.R facility



Printing & Assembly



TAEJIN Innovation Products



Laser Decoration & Marble effect_35page



ISBM Heavy Blow_36page



Aerosol Bottle_34page



Injection overmolding Blow_32, 38page



Insert Injection_39page



EBM Inner Pattern Blow_37page



Pouch Airless_30, 40page

Cosmetic package design

New type CREAM JAR



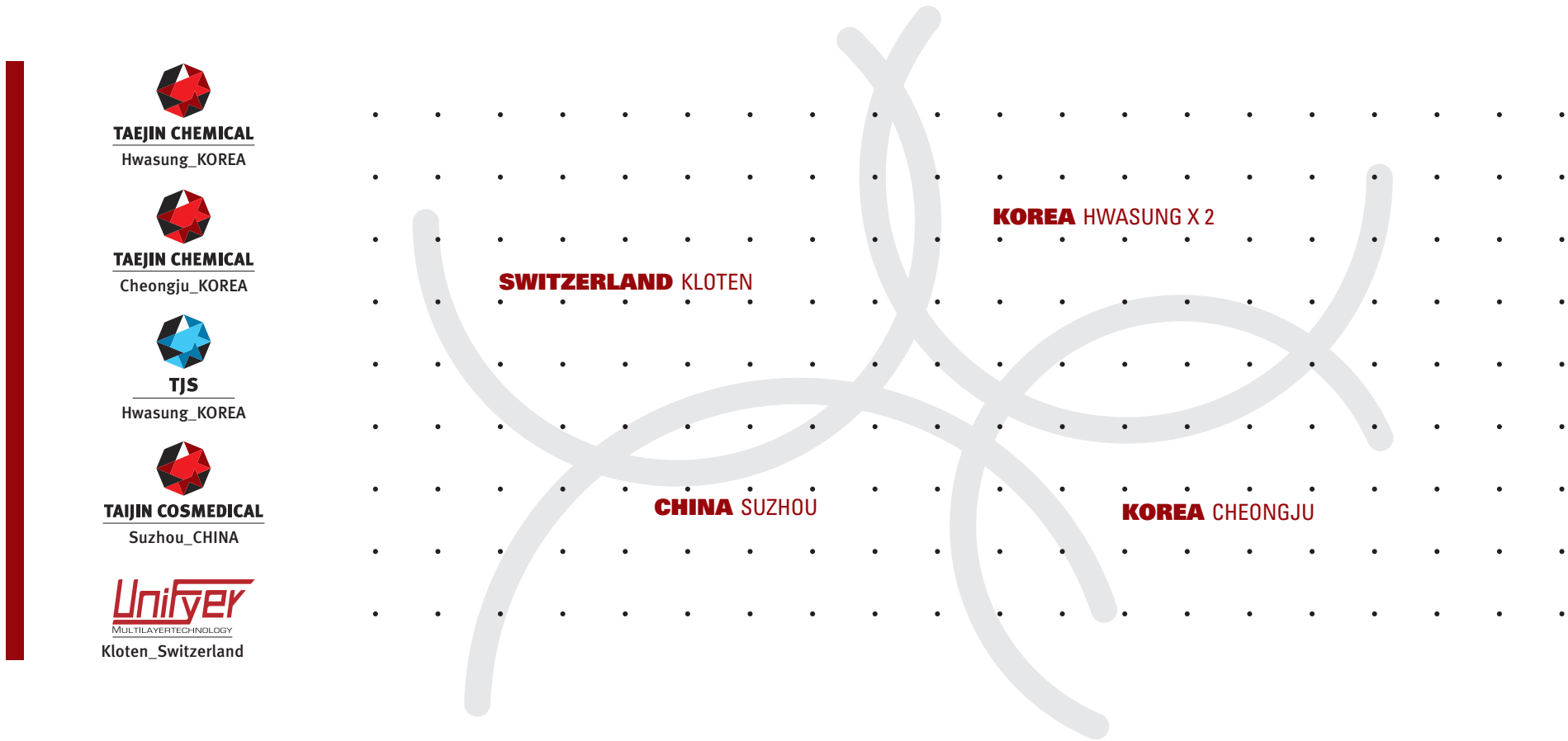
New type ESSENCE SERIES



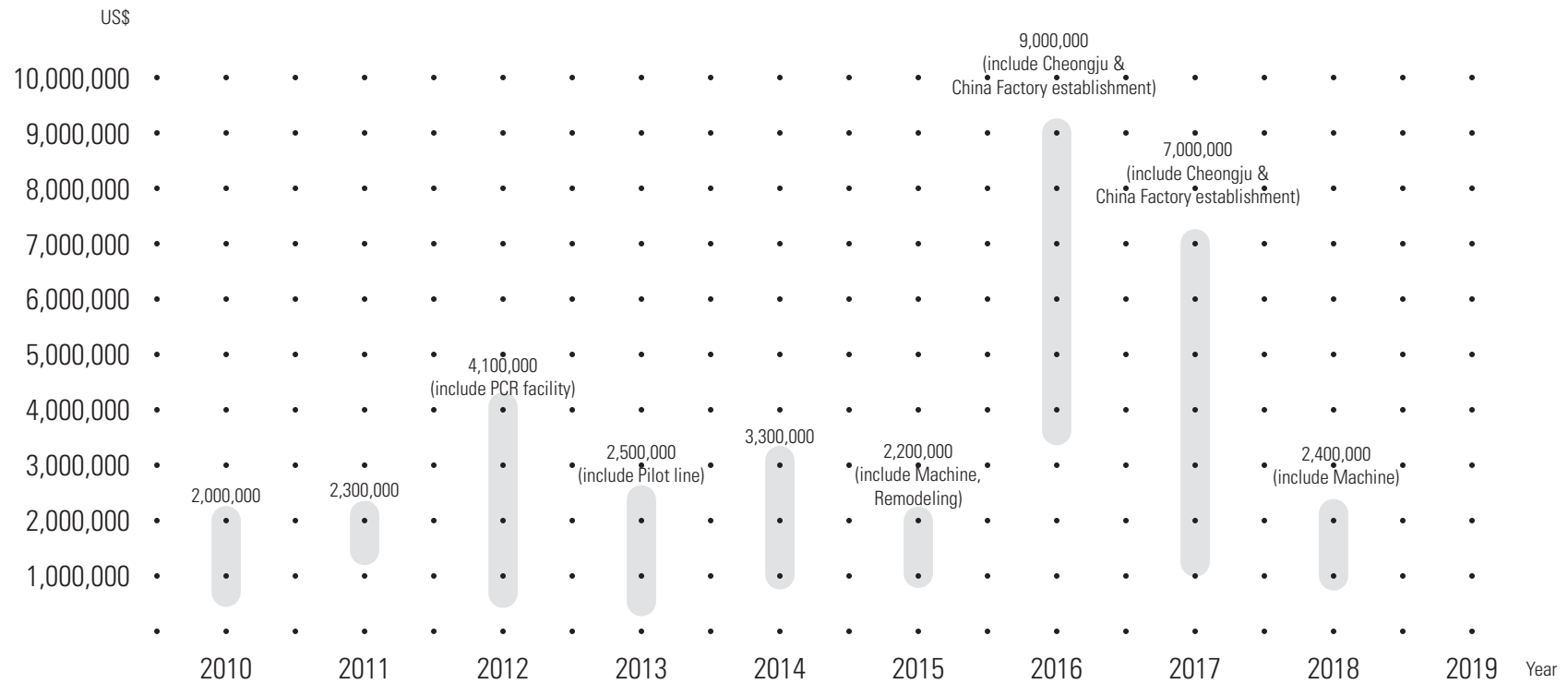
New type Make-up Series



Business Network & Client / Brand



Investment Statement



LANEIGE

Mamonde

BEYOND

IOPE



HERA



OSM



Packaging Stylist

TAEJIN CHEMICAL Hwasung Factory

TAEJIN Chemical Co., Ltd. in Korea

Machinery **26**lines

ISBM (Injection stretch blow molding)

- AOKI : 16 lines
- NISSEI ASB : 5 lines

IBM (Injection blow molding)

- NOVAPAX : 5 lines

Pilot M/C (NISSEI) : 1 line

Show room (AOKI) : 1 line





Taejin Hwasung factory

Inside of factory



Injection Stretch Blow Molding



NISSEI ASB Machine (ISBM)



AOKI Machine (ISBM)



NOVAPAX Machine (IBM)

Machine statement : 26 lines

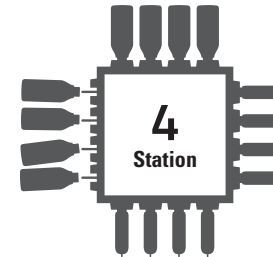
ISBM : 21 lines

AOKI : 16 lines



- AOKI 100** : 8 lines (for small container 4ml~150ml)
 - AOKI 150** : 1 line (2 row machine-mass production for small container 4ml~20ml)
-easy preform quality control
 - AOKI 250** : 6 lines (for normal container 100ml~1500ml)
 - AL 500LL** : 1 line (High cycle, high plasticization capacity molding machine for multi-purpose containers)
-
- AOKI 100** : 1 line (For display / in the Show room)

ASB NISSEI : 5 lines

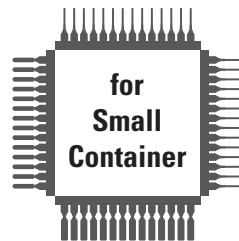


- ASB 12N/10** : 2 lines (Compact machine for small containers. for thick wall container with gate cutting system)
 - ASB 12M** : 1 line (Compact machine with Jar molding capability. for thick wall container with gate cutting system)
 - ASB 70DPH** : 1 line (Versatile machine for Jars & small to medium sized bottles. for thick wall container with gate cutting system)
-
- Pilot M/C**
 - ASB 12M** : 1 line (For Testing)



IBM : 5 lines

NOVAPAX : 5 lines



- 650/110-480 ES (No.1, No.2) : 2 lines (for small container with variety resin use)
- 650/110-480 (No.3) : 1 line (for small container with variety resin use)
- 400/90-260 (NO. 4) : 1 line (for small container with variety resin use)
- 400/60-260 (No. 5) : 1 line (for small container with variety resin use)



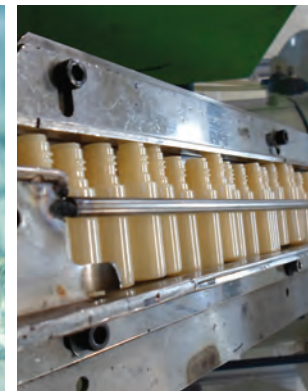
* AOKI(Japan), ASB NISSEI(Japan), NOVAPAX(Germany) are machine making company.

Machinery

Pilot M/C



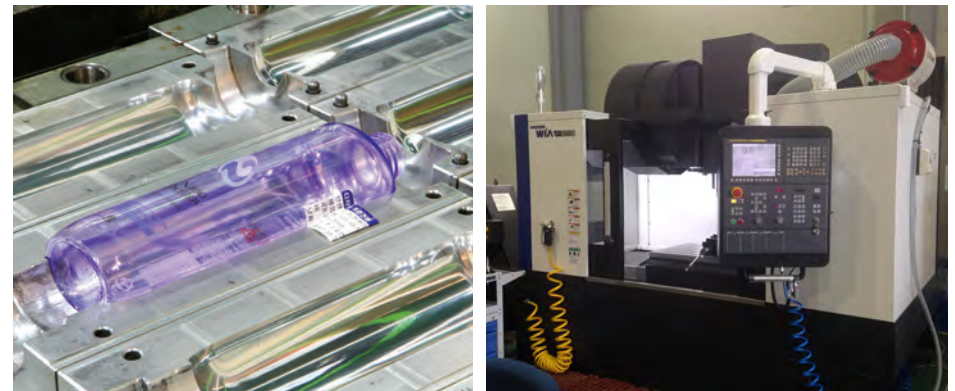
Printing line



P.C.R facility



Mold making & repair facility



Packaging Stylist

TAEJIN CHEMICAL Cheongju Factory

TAEJIN Chemical Co., Ltd. in Korea

Machinery **19**lines

ISBM (Injection stretch blow molding)

- AOKI : 13 lines
- NISSEI ASB : 6 lines



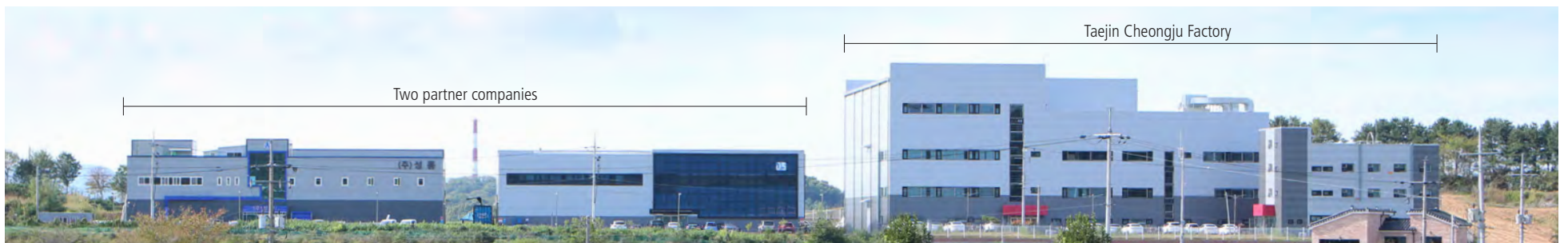
Inside of factory



Taejin Cheongju factory



We have two post processing partner companies (printing, labeling) next to Taejin Cheongju factory



Inside of factory



ISBM machines in Cheongju factory



2 row machine (AOKI 150N) - mass production for small container



Dryer for low pressure air



Dryer for High pressure air



Storage



Gate cutting system (NISSEI ASB)

Machine statement : 19 lines

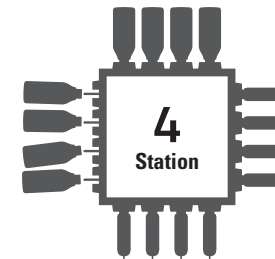
ISBM : 19 lines

AOKI : 13 lines



- AOKI 150**: 3 lines (2 row machine-mass production for small container 4ml~20ml)
-easy preform quality control
- AOKI 250**: 6 lines (for normal container 100ml~1500ml)
- AOKI 350**: 4 lines (for mass production 200ml-10cavity, 500ml-8cavity)

ASB NISSEI : 6 lines



- ASB 12N/10** : 3 lines (Compact machine for small containers.
for thick wall container with gate cutting system)
- ASB 12M** : 1 line (Compact machine with Jar molding capability.
for thick wall container with gate cutting system)
- ASB 70DPH** : 2 lines (Versatile machine for Jars & small to medium sized bottles.
for thick wall container with gate cutting system)



Packaging Stylist

TJS Hwasung Factory 1

TJS Co., Ltd. in Korea

Machinery **14**lines

Injection molding M/C

- 170 TON : 3 lines
- 220 TON : 7 lines
- 280 TON : 1 line
- 350 TON : 2 lines
- 450 TON : 1 line



Inside of factory & Machinery



1st Hwasung factory of TJS



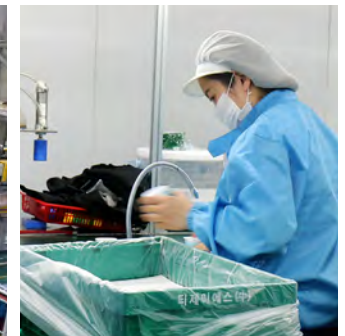
Injection molding M/C line



Shoulder



Inside of factory



Assembly line

Packaging Stylist

4 TJS Hwasung Factory 2

TJS Co., Ltd. in Korea

Machinery **8**lines

Extrusion blow molding M/C

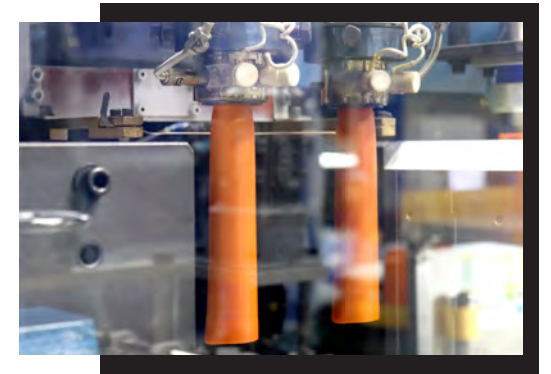
- 1 HEAD : 6 lines (50ml : 5 lines , 60ml : 1 line)
- 2 HEAD : 1 line (70ml)
- 4 HEAD : 1 line



Inside of factory & Machinery



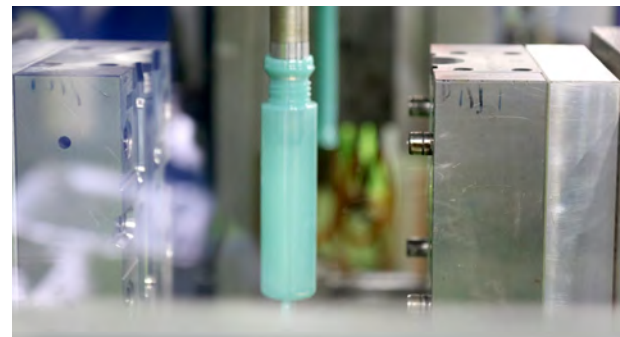
2nd Hwasung factory of TJS



Extrusion blow molding M/C line



Parison (Before blowing)



After blowing



Trimming

Packaging Stylist

TAIJIN COSMEDICAL China Factory

Suzhou, China

Machinery **22**lines

ISBM (Injection stretch blow molding) : 3 lines

- NISSEI ASB 12N : 2 lines
- NISSEI ASB 12M : 1 line

Two-step stretch blow molding M/C : 1 line

Injection molding M/C : 16 lines

- 170 TON : 5 lines
- 220 TON : 9 lines
- 280 TON : 2 lines

Extrusion blow molding M/C : 2 lines

- 1HEAD : 2 lines

Printing line & Assembly line



Inside of factory & Machinery



Taijin Cosmedical



Injection stretch blow molding M/C line



Extrusion blow molding M/C line



QC



Injection molding M/C line



Assembly line



Printing line

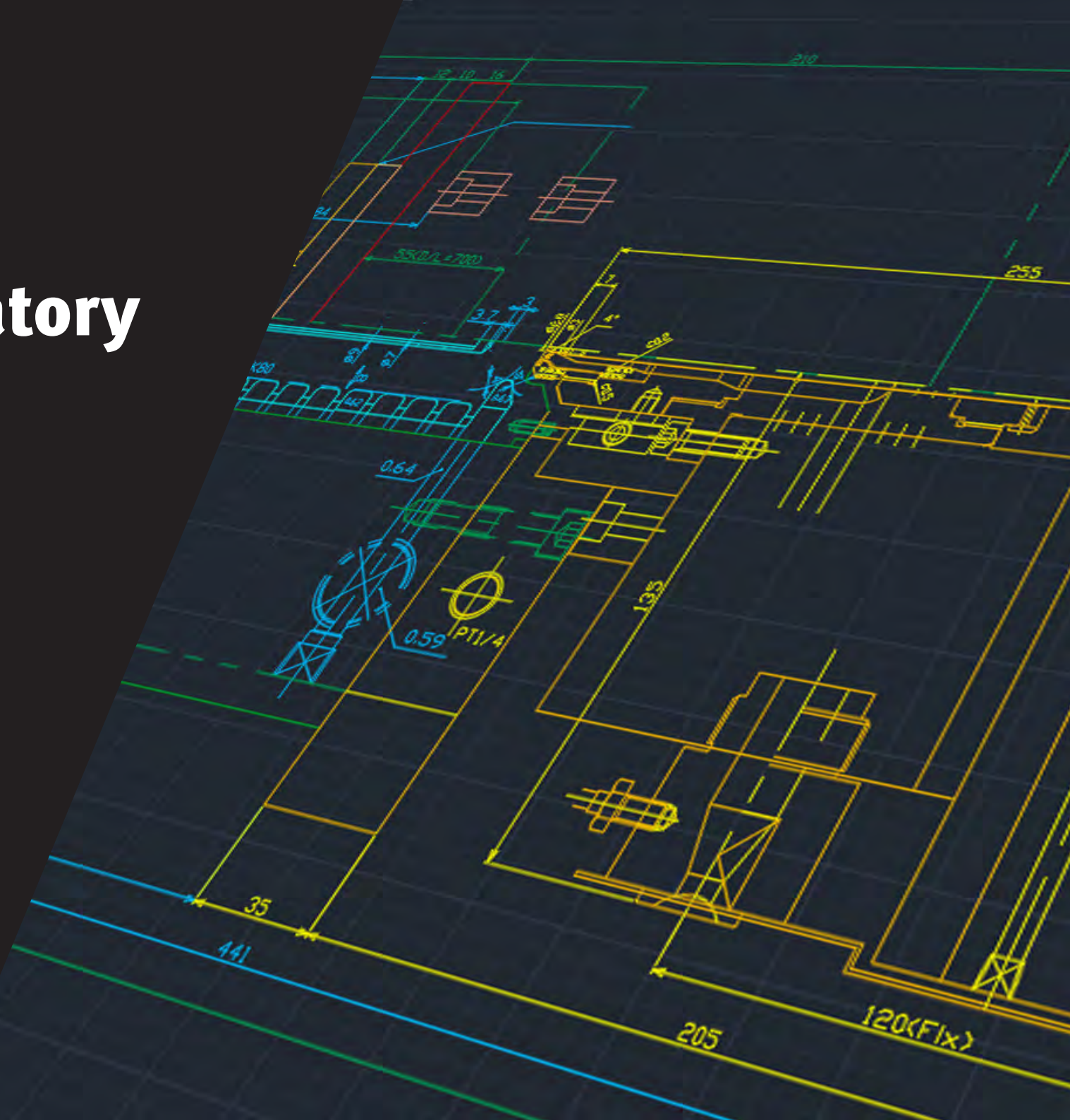
Packaging Stylist

Unifyer R&D Laboratory

Kloten, Switzerland

Machinery **1**line

Multilayer Injection blow molding M/C : 1 line

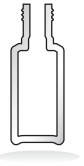


Factory

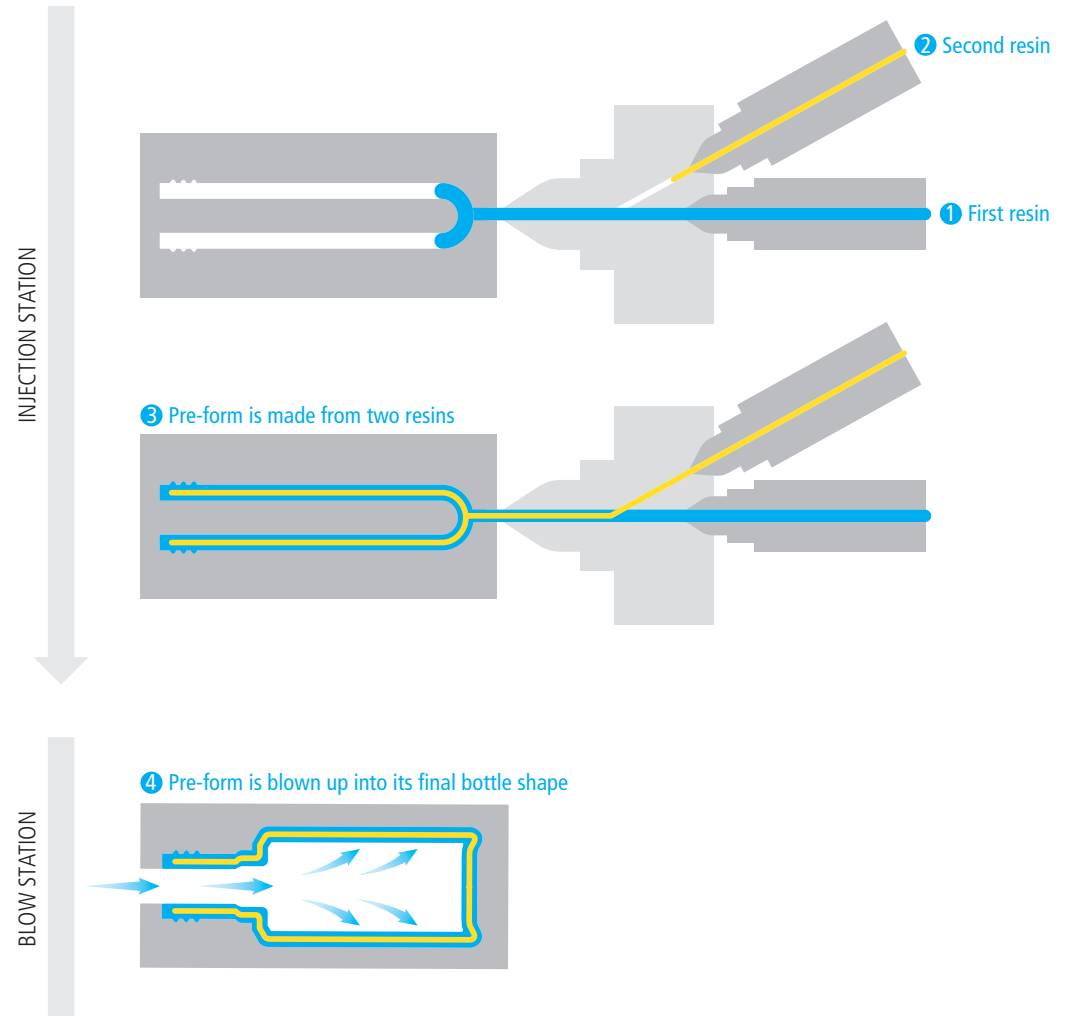
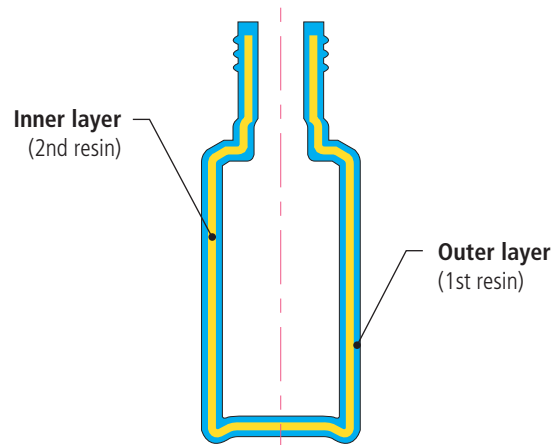


Multilayer Injection Blow Molding

How the bottles are made?

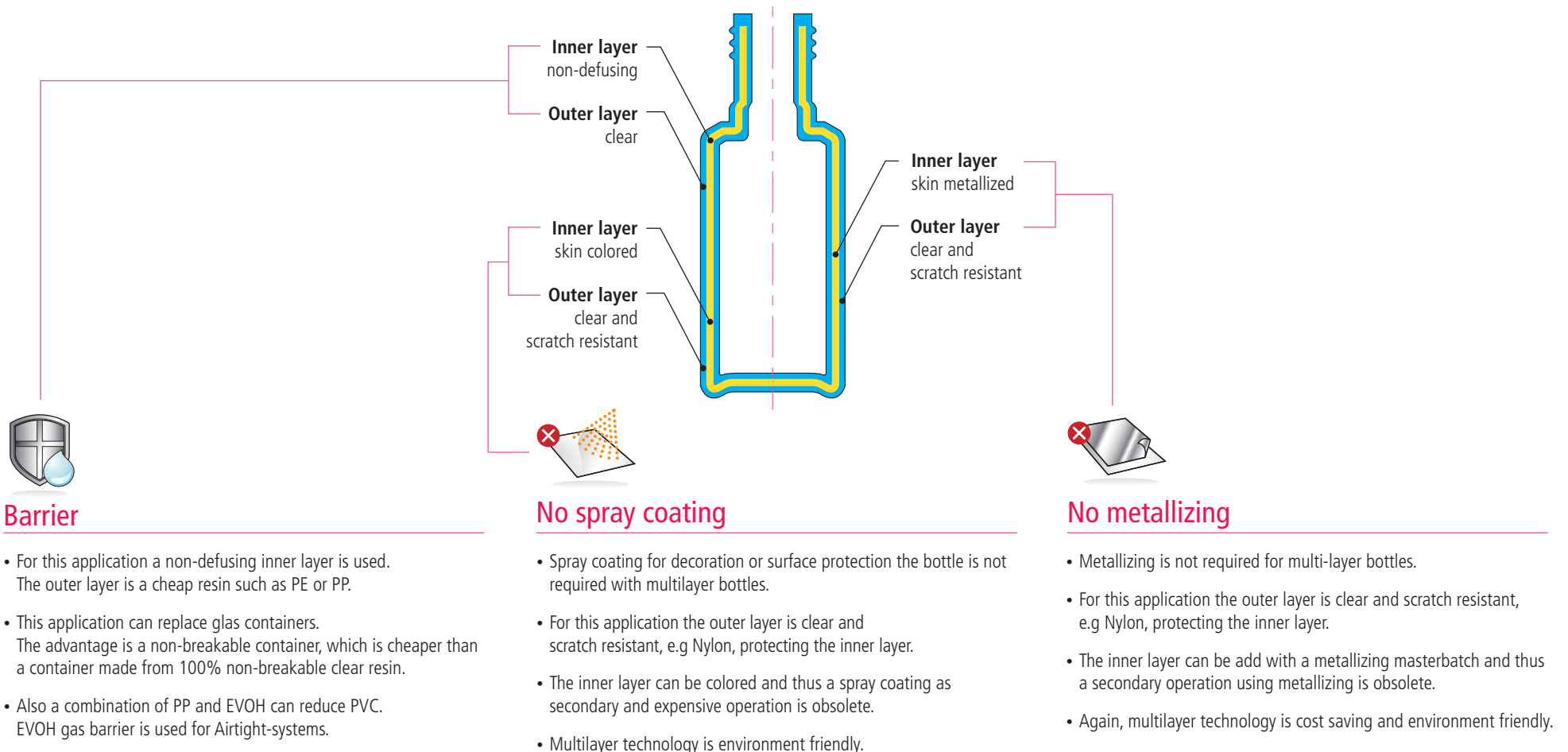


1. On a co-injection blow molding machine, first of two resins is injected into a pre-form mold.
 2. And then, Second resin starts to be injected.
 3. Pre-form is made. (Second resin stops and then first resin stops.)
 4. After injecting, the preform is transferred into the blow station. There the pre-form is blown up into its final bottle shape.
- * The general bottle structure is shown at the bottom.



Multilayer Injection Blow Molding

Benefit



Barrier

- For this application a non-defusing inner layer is used. The outer layer is a cheap resin such as PE or PP.
- This application can replace glass containers. The advantage is a non-breakable container, which is cheaper than a container made from 100% non-breakable clear resin.
- Also a combination of PP and EVOH can reduce PVC. EVOH gas barrier is used for Airtight-systems.

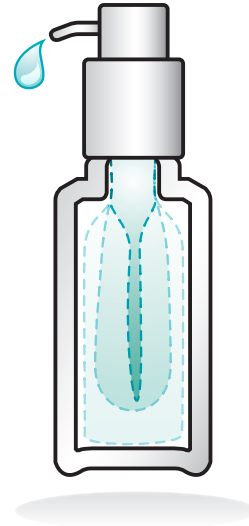
No spray coating

- Spray coating for decoration or surface protection the bottle is not required with multilayer bottles.
- For this application the outer layer is clear and scratch resistant, e.g. Nylon, protecting the inner layer.
- The inner layer can be colored and thus a spray coating as secondary and expensive operation is obsolete.
- Multilayer technology is environment friendly.

No metallizing

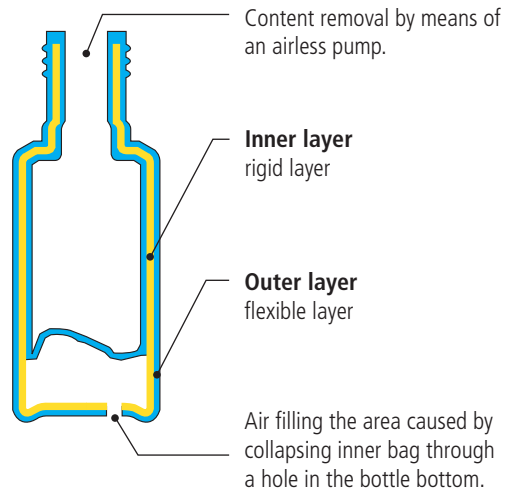
- Metallizing is not required for multi-layer bottles.
- For this application the outer layer is clear and scratch resistant, e.g. Nylon, protecting the inner layer.
- The inner layer can be added with a metallizing masterbatch and thus a secondary operation using metallizing is obsolete.
- Again, multilayer technology is cost saving and environment friendly.

Multilayer Injection Blow Molding [Pouch-Airless Hold a Patent]



Pouch bottles

- Pouch bottles can be done by multilayer injection blow molding.
- For this application a rigid inner layer such as PET is used. The outer layer is from a very flexible resin such as Surlyn.
- The hole is done during the process. All bottles are 100% function tested, which is giving safety for the filler and the cosmetic company.

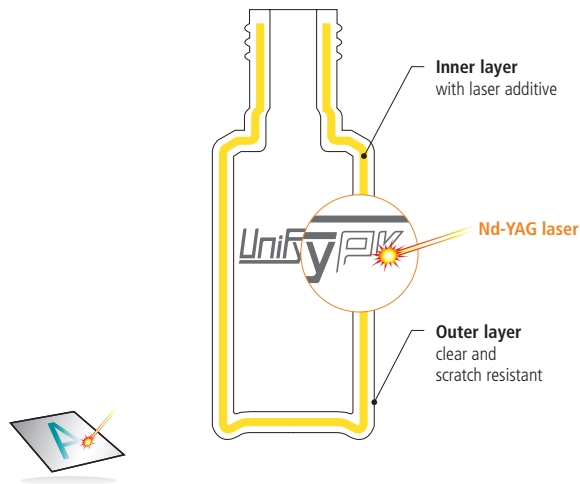


Application

- Pouch bottles are used with airless pumps.
- The airless pump is sucking the content.
- Parallel the bag is collapsing. Through a hole in the bottle bottom air is flowing in-between the bag and the rigid layer.



Multilayer Injection Blow Molding [Decorating Hold a Patent]



Laser marking

- Multilayer bottles are opening a new world of laser decoration.
- A laser additive is mixed to the inner layer.
- Typically Nd-YAG are used for this application.

*Laser marking results on solid filled and random fill.



Details

- Laser markings are light or dark. Light markings are like dirty white and dark markings are medium grey.
- Using a Nd-YAG laser with 1064 nm is creating markings darker due to karbonating. UV lasers with 355 nm creating a lighter marking.
- Laser additives can be used for clear layers, but reducing the clarity of the resin a little bit.



Laser foaming

- Laser marking foaming results.



Details

- By use of a laser, a logo can be foamed into the surface of the bottle. These unique markings are lying grey shiny on the surface of the bottle.

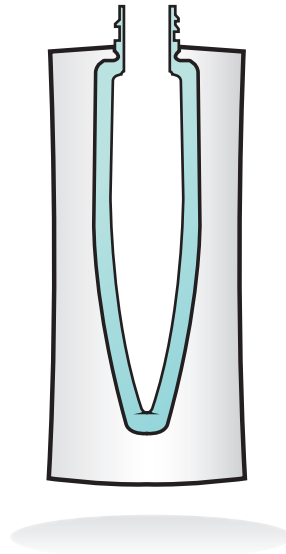


Random-Fill

- Clear outer layer and a colored inner layer.
- Every bottle is filled individual. Each Random-Fill is a unique "one and only" bottle.



Injection Blow Overmolding



1 Step Overmolding

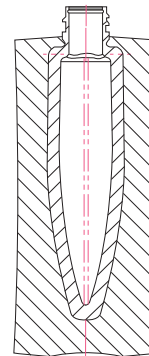


- Colored or clear mascara bottle, overmolded with a thick, clear layer of Surlyn.



How the bottles are made?

- On a injection blow molding machine the first resins is injected into a pre-form mold.
- After injecting, the preform is transferred into the blow station. There the pre-form is blown up into its final bottle shape.
- After blowing, the bottle is transferred into the second injection station, where the bottle is overmolded.
- The general bottle structure is shown at the right hand side.



New Design



- Combination of high quality injection blow molded bottles with solid clear overmolding structure does offer the customer a higher value.
- High end market product.

INNOVATION

- Aerosol Bottle
- Laser Decoration & Marble effect
- ISBM Heavy Blow
- EBM Inner Pattern Blow
- Injection overmolding Blow
- Insert Injection
- Pouch Airless

Aerosol Bottle

“CANS can be replaced with PET”



AMORE *ETUDE_ Facial mist

AMORE *AESTURA_ ATOBARRIER

- M/B color is available. (CAN bottle is not available)
- Transparent aerosol bottle.
- Various design
- Post processing of the plastic bottle is available.
- More than cheaper (The existing aluminium CAN)



Laser Decoration & Marble effect

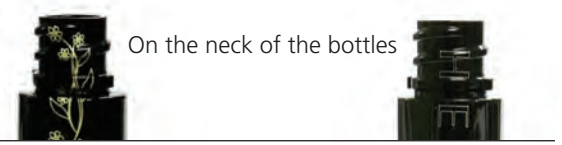


Any^{where}_{material}
No^{Flaking}

The colors on the surface can be changed. • The best base color is a black.

Marble effect

1 It can be expressed anywhere



On the neck of the bottles

2 NO Flaking

The logo is in the middle layer, so it can't be removed. There is no jagged face on the surface.

What is the "Laser Decoration"?

"Laser Decoration" is a effect that you want to express something (logos, patterns and so on) on the surface by using laser.

Multiple Layer Bottle + Laser + Special Pigment

We can produce "Multiple Layer Bottles"
We use them for the "Laser Decoration" & Special pigment...

...so How can it be used? You can use this for...

- Seasonal goods
- Limited goods
- Anti Copy
- Eco friendly
- Various Design

ISBM Heavy Blow

Glass?
Guess!



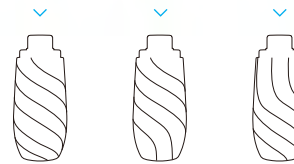
- Light and Strong more than Glass
- Mold Cost : Unpriced (changed by Cavity)
- Mold making period: 35 days
- Good transparent, surface, gloss (more than glass)
- Material is only PET (NO Mix PETG)
- A competitive price

EBM Inner Pattern Blow

Feel it Not outer,
Inner



- The pattern is in the bottle.
- Various & regular pattern is available.
- Various design
- Differentiated design bottle.



[Kind of inner pattern]

Injection Overmolding Blow



- Just have sample mold
- Mold making time(by 4 cavity) : 4 month
- Inside bottle blowing and outside bottle blowing at the same time
(2 step process > 1 step process)

Insert Injection

Plastic + Surlyn



Glass + Surlyn



- Mold Cost (Glass - 50,000 USD, Plastic - 36,000 USD by 4 Cavity)
- Mold making period: 3 month
- Show like Deep, Profound Product, Various design.
- Blowing Inside bottle > Printing, laser marking > Blowing Outside bottle



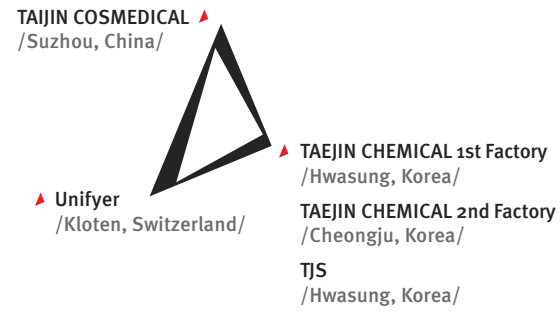
Pouch Airless

Multilayer injection blow molding



- Hold a Patent
- Various design
- Mold Cost (127,800 USD by 4 Cavity)
- Mold making period: 4 month
- Parallel the bag is collapsing. Through a hole in the bottle bottom air is flowing in-between the bag and the rigid layer.
- inside bag blowing and outside bottle blowing at the same time
- More than cheaper (The existing Pouch – Airless)

Houses of TAEJIN



TAEJIN CHEMICAL
Packaging Stylist

www.tjchem.co.kr