Your partner for primary rubber packaging components







- 1. HISTORY
- 2. ORGANIZATION
- 3. MANUFACTURING PROCESS
- 4. PRODUCT PORTFOLIO
- 5. PLANT
- 6. CERTIFICATE



1. HISTORY

2018 Patent for Manufacturing of Medical Rubber Stoppers in Korea

2017 Patent for Manufacturing Methods for Reclaimed Rubber using Electron-Beam in Korea

2016 New Plant in Hwaseong

2015 R&D: Extractable Test(Toxicon) Completion

2015 MES(Manufacturing Execution System) Introduction and Application

2014 ISO 15378 Certified

2013 Medical Rubber Stopper Production Process Development for Waste & Energy Reduction Projected

by Small & Medium Business Administration

2012 R&D: optimized modern formulation

Medical Rubber Stopper(Cartridge Syringe Type) Development Projected

by Small & Medium Business Administration

2011 Medical rubber and Manufacturing Method Korea patent Application 10-2011-0007578

2010 Plant in Ansan: expansion and upgrade

2008 FDA DMF Type III deposited

2004 ISO 13485 Certified

2000 Selected as "Excellent Company for Innovation" by Korean Government

1999 Patent for ETFE coated stoppers in Korea

1998 ISO 9001 Certified

1993 K.S. (Korea Standard) Mark awarded by Korean Government

1991 Factory, SMRC(M) SDN. BHD. Establishment in Malaysia

1985 Technical Agreement with Naniwa Rubber

1985 R&D Cooperation with KAIST (Korea Advanced Institute of Science & Technology)

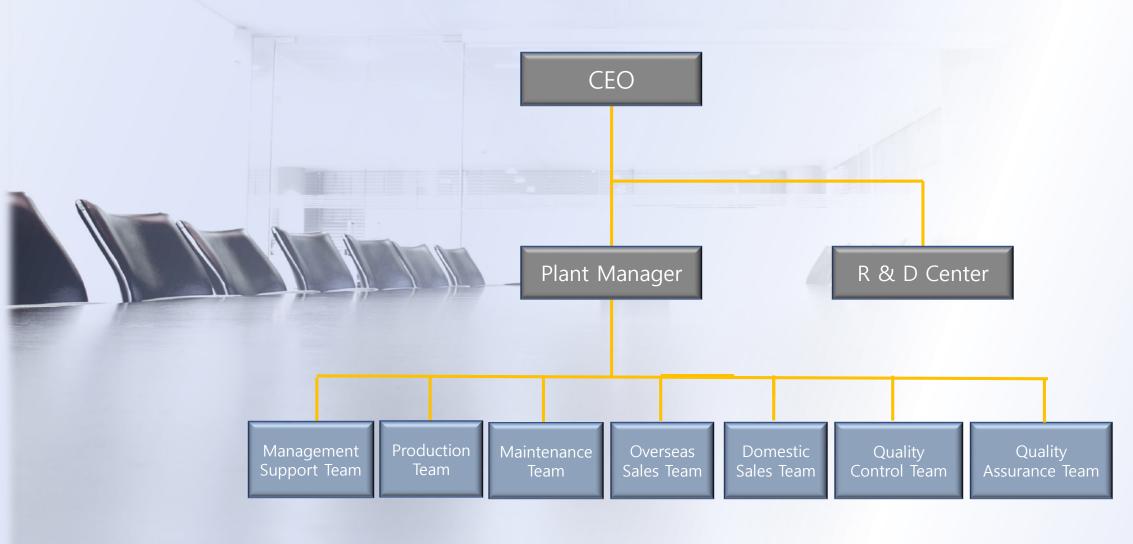
1985 Plant in Ansan

1980 KP/JP compliance obtained

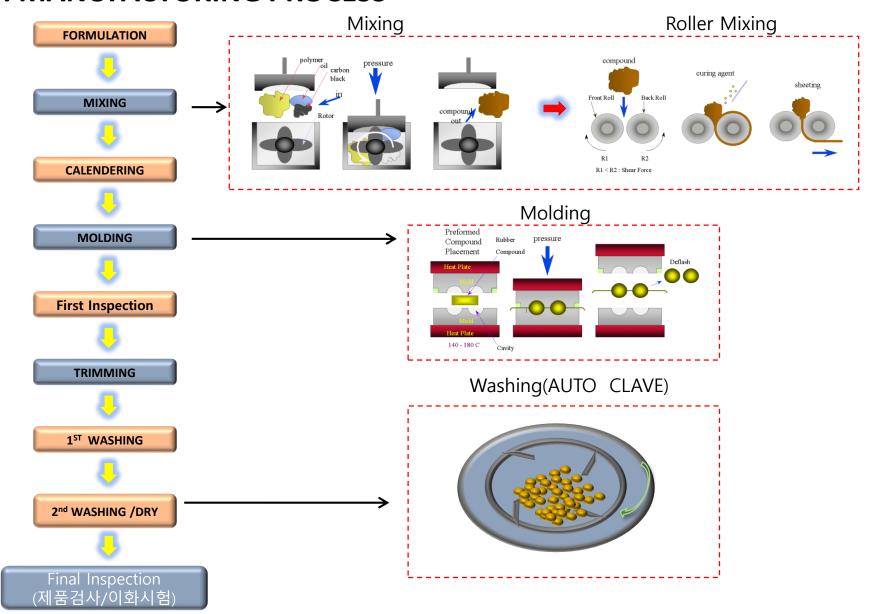




2. ORGANIZATION

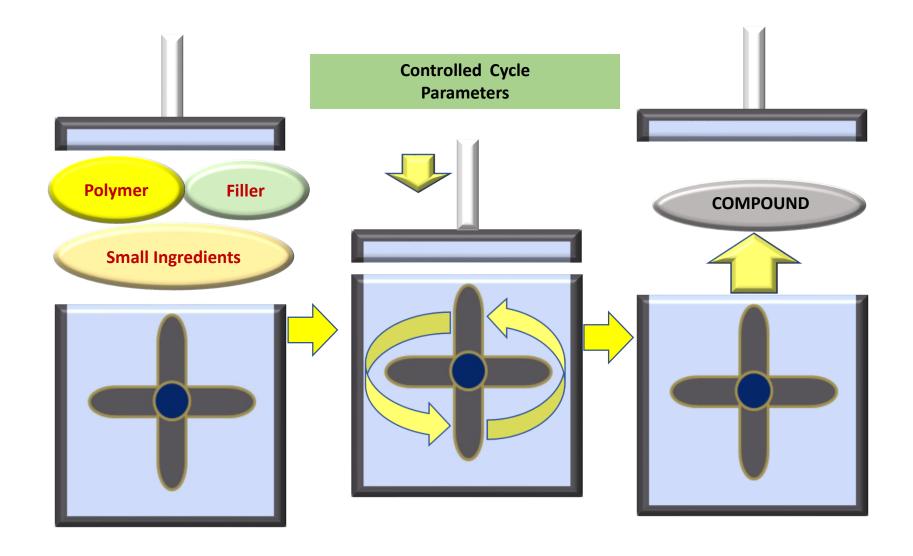


3. MANUFACTURING PROCESS



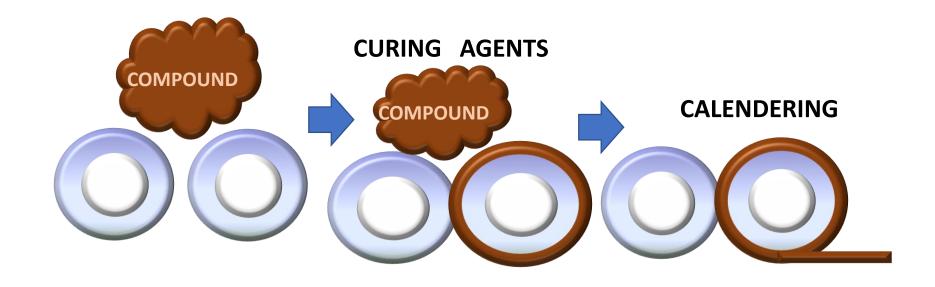


1) FORMULATION & MIXING





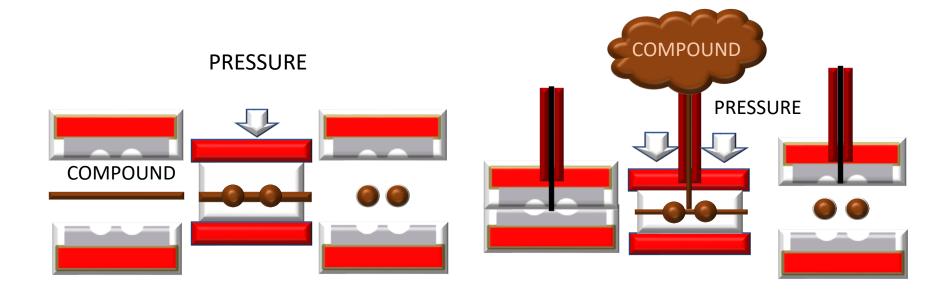
2) CALENDERING



Open Mill



3) MOULDING

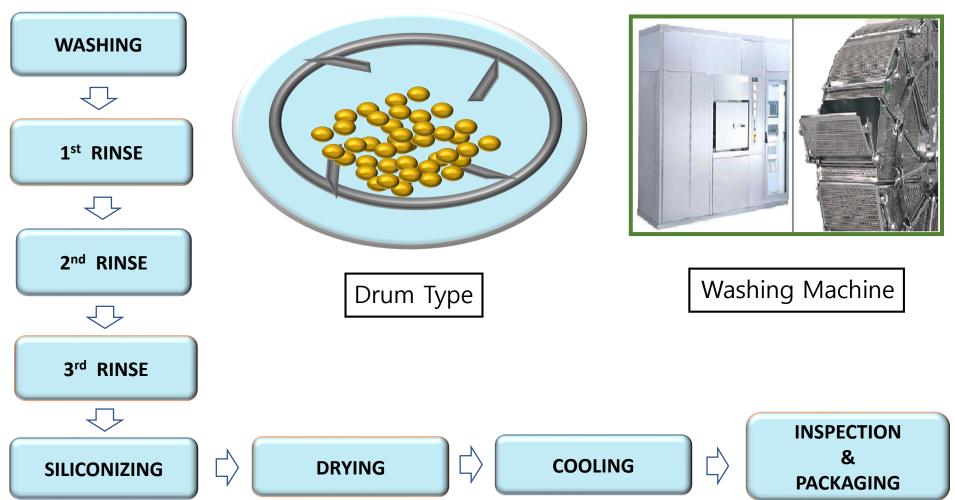


1) COMPRESSION MOLDING

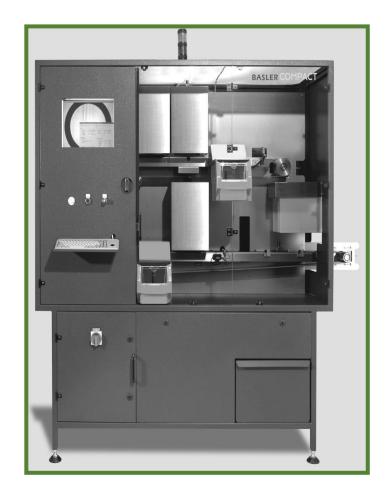
2) INJECTION MOLDING



4) WASHING PROCESS



5) CAMERA INSPECTION



FULL AUTOMATIC INSPECTION

- Incomplete geometry
- Functional diameters
- Thickness
- Surface defects
- Particles & fiber



4. PRODUCT PORTFOLIO

- ► Injection and intravenous stoppers
- **►** Lyophilization stoppers
- **▶** Laminated stoppers
- **▶** Rubber Disc for Inntravenous application
- ► Rubber Components (Intravenous Dispensing System)
- **▶** Blood Collection Tube
- ► Rubber Plungers for Pre-filled and disposable syringe



1) INJECTION & INTRAVENOUS STOPPERS

- **▶** Wide Range of Designs available
- ► High performance for mechanical properties
- **▶** Customized designs to be developed







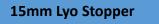


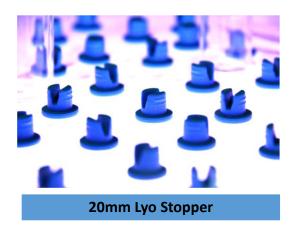
2) LYOPHILIZATION STOPPERS

- **▶** Tailor made Formulation:
 - Low gas and vapor permeability
 - Low residual humidity
- **▶** Standard and customized Design
- ▶ 13mm, 15mm, 20mm







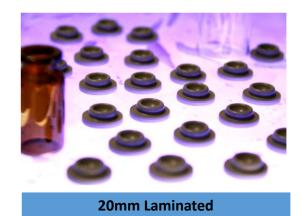


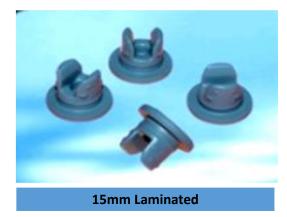


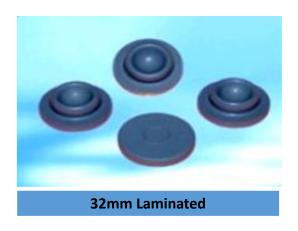
3) LAMINATED STOPPER

- ► Proprietary Lamination Technology
- ► Registered Patents, Korea
- ► Coated with fluorinated Films
- **Excellent barrier Properties**
- ► Silicon-free on coated side
- ► Injection Lyo and intravenous available

- **▶** Coating on Contact Sides guarantees compatibility.
- 2 Types Of Fluorinated Films:
 - 1) ETFE(Ethylene Tetra fluoro Ethylene)
 - 2) FEP (Fluorinated Ethylene Propylene Copolymer)
 - High chemical resistance, Low and High temperature capability Low friction, electrical and thermal insulation.









4) RUBBER DISC FOR INTRAVENOUS APPLICATION

- ► Standard designs for Glass and Plastic bottles
- ► Functional performance (piercing and retain-force)
- ► In compliance with major worldwide standards











5) RUBBER COMPONENTS (INTRAVENOUS DISPENING SYSTEM)

- ► RUBBER CONNECTOR & SLEEVE STOPPERS
- ▶ 100% LATEX FORMULATION & LATEX FREE FORMULATION
- ► Passed USP CLASS VI TESTS (U.S. PHARMACOPEIA)









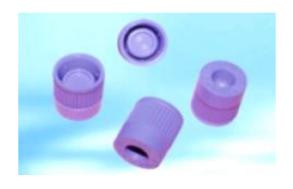


6) BLOOD COLLECTION TUBE

- **▶** Used for blood collection
- **▶** Optimum formulation
- ► Meet high demand in design accuracy







MONO CAP



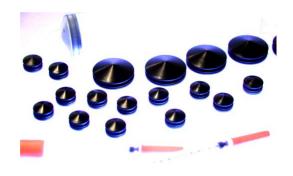
VACUJECT ¢ 13.6



7) RUBBER PLUNGERS FOR PRE-FILLED AND DISPOSABLE SYRINGE

- ▶ 100% LATEX FREE for PFS
- ▶ 100% LATEX if needed (ISOPRENE FORMULATION)
- ► HIGH QUALITY and LONG SHELF-LIFE









5. PLANT





Completion : Sep. 2016

Total Area: 9,082m²

Building Area: 7,500m²



6. CERTIFICATE1) ISO 9001, 15378



- ► ISO 15378 CERTIFICATE (BUREAU VERITAS, FRANCE)
- ► GUARANTEE OF MANUFACTURING PROCESS



- ► ISO 9001 CERTIFICATE (BUREAU VERITAS, FRANCE)
- ► GUARANTEE OF MANUFACTURING PROCESS / QUALITY MANAGEMENT SYSTEM



6. CERTIFICATE2) Patents





<Korea Patent Application 10-2017-0023529> <Korea Patent Application 10-2017-0023528>

Manufacturing Methods for Reclaimed Rubber Using Electron-Beam

(Acquired in 2018)

Manufacturing Methods for Medical

Rubber Stopper

(Acquired in 2017)



<Korea Patent Application 10-2011-0007578>

Medical Rubber Stoppers & those Manufacturing Methods

(Acquired in 2011)



THANK YOU!

