

## Pre-filled Glass Syringe »»

Application: for drug packaging, storage, and direct injection.

Sizes: 1ml/2.25ml/3ml/5ml/10ml Luer or Luer Lock.

Package: nest box, EO sterilized.

RTU: siliconized, sterilized, ready to use.



## Technology Data of Pre-filled Syringe »»

| Components     | Material                            | Quality Standard  | Type                                   | Supplier   |
|----------------|-------------------------------------|---|--|--|
| Glass Barrel   | Neutral Borosilicate Glass          | According to SFDA Standard/YBB00062004-2015                   | D:10.85±0.1mm, ID:8.65±0.09mm, L:150CM | SCHOTT AG(Germany)   |
| Needle Shield  | Polyisoprene                        | According to SFDA Standard/YBB00062004-2015                   | 7028/55GREY                            | WEST(France)   |
| Rubber Stopper | Chlorinated/Brominated Butyl Rubber | According to SFDA Standard/YBB00082004-2015, YBB00072004-2015 | PH701/50C black 4023/50 4432/50        | WEST(USA)  |
| Needle         | Stainless Steel 304(AISI304)        | According to SFDA Standard/YBB00062004-2015                   | 25G/26G/27G                            | Saito Medical Industries(Japan), Shandong Qiaopai Group(China), Zhejiang Kandelai Medical Devices Co.,Ltd(China) |
| Plunger Rod    | Polystyrene                         |   |  | Produce under 10000 grade purification plant   |
| Adhesive       | Two methacrylic acid grease         |   | 7041                                   | HOENLE(Germany)  |
| Lubricant      | Silicon Oil                         |   | 1000CST                                | DOW CORNING(USA)   |
| Sterile Bag    | Tyvek                               |   |  | DUPONT(USA)  |
| Honeycomb      | High-polystyrene(HIPS)              |   |  | MINGKANG(China)  |
| Nest box       | High-polystyrene(HIPS)              |   |  | MINGKANG(China)  |

## Roll booster



## Moulded Glass Bottle, USP Type I, Type II »»

Application: for antibiotics and other powder crude drugs

Color: Clear and Amber

Package: corrugated cartons , pallets



|                       | specification | gross weight | main size(mm) |           |            |            |                 |
|-----------------------|---------------|--------------|---------------|-----------|------------|------------|-----------------|
|                       |               |              | total height  | body O.D. | mouth O.D. | mouth I.D. | mouth thickness |
| Moulded glass bottles | 7ml           | 13g          | 40.8          | 22.1      | 20±0.3     | 12.6±0.2   | 3.8±0.2         |
|                       | 8ml           | 16g          | 46.8          | 23.0      |            |            |                 |
|                       | 10ml          | 21g          | 53.5          | 25.4      |            |            |                 |
|                       | 15ml          | 24g          | 58.8          | 26.5      |            |            |                 |
|                       | 20ml          | 29g          | 58.0          | 32.0      |            |            |                 |
|                       | 30ml          | 35g          | 62.8          | 36.0      |            |            |                 |
|                       | 50ml          | 50g          | 73.0          | 42.5      |            |            |                 |
|                       | 100ml         | 89g          | 94.5          | 51.6      |            |            |                 |

## Glass Vials »»

Type: injection vials, tablet vials, screwed neck vials

Standard: ISO standard or customized specification

Printing: customized printing available



| Specification      |    | ml | 2R    | 4R    | 6R    | 8R    | 10R   | 15R   | 20R   | 25R   | 30R   |
|--------------------|----|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Tube O.D.          | d1 | mm | 16.00 |       | 22.00 |       | 24.00 |       | 30.00 |       |       |
| Crown O.D.         | d2 | mm | 13.00 |       | 20.00 |       |       |       |       |       |       |
| Max. Neck Diameter | d3 | mm | 10.50 |       | 16.00 |       | 16.50 |       | 17.50 |       |       |
| Neck I.D.          | d4 | mm | 7.00  |       | 12.60 |       |       |       |       |       |       |
| Overall L.         | h1 | mm | 35.00 | 45.00 | 40.00 | 45.00 | 45.00 | 60.00 | 55.00 | 65.00 | 75.00 |
| Vial Top H.        | h3 | mm | 8.00  |       | 8.50  |       | 9.00  |       | 10.00 |       |       |
| Crown H.           | h4 | mm | 3.60  |       |       |       |       |       |       |       |       |
| Tube W.T.          | s1 | mm | 1.00  |       |       |       |       |       | 1.20  |       |       |
| Min. Bottom Th.    | s2 | mm | 0.70  |       |       |       |       |       |       |       |       |

## Glass Cartridge »»

- 1)Material: COE 5.0 /COE 7.0 pharmaceutical neutral borosilicate glass tube
- 2)A set of cartridge: glass barrel, rubber plunger, aluminum cap with seal inside
- 3)Application: for insulin and anesthetic and sedation drugs etc
- 4)Package: PP tray and cartons
- 5)Color: clear



| Size  | Out Diameter(mm) | Height(mm) | Cap     |         | Plunger |       | O.D(mm) |
|-------|------------------|------------|---------|---------|---------|-------|---------|
|       |                  |            | O.D(mm) | I.D(mm) | I.D(mm) | H(mm) |         |
| 1.5ml | 8.65             | 57         | 7.15    | 3.15    | 7.45    | 4.9   | 7.3     |
| 1.8ml | 8.65             | 63         |         |         |         |       | 7.3     |
| 3.0ml | 11.6             | 62.3       |         |         |         |       | 9.95    |

## Glass test tube »»

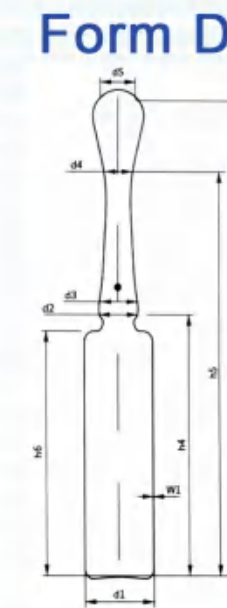
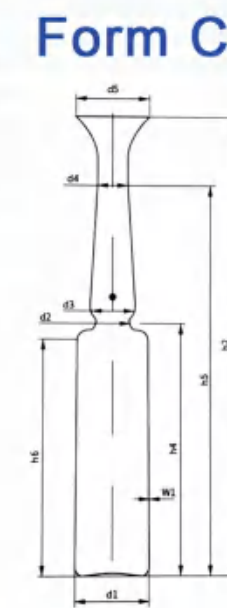
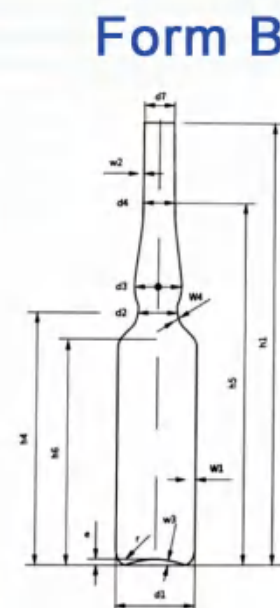
| Type | Round bottom or flat bottom |
|------|-----------------------------|
|      | With rim or without rim     |
|      | Screw mouth or flat mouth   |
|      | Printing or not             |
|      | With cork or plastic cap    |



# Glass Ampoules >>>

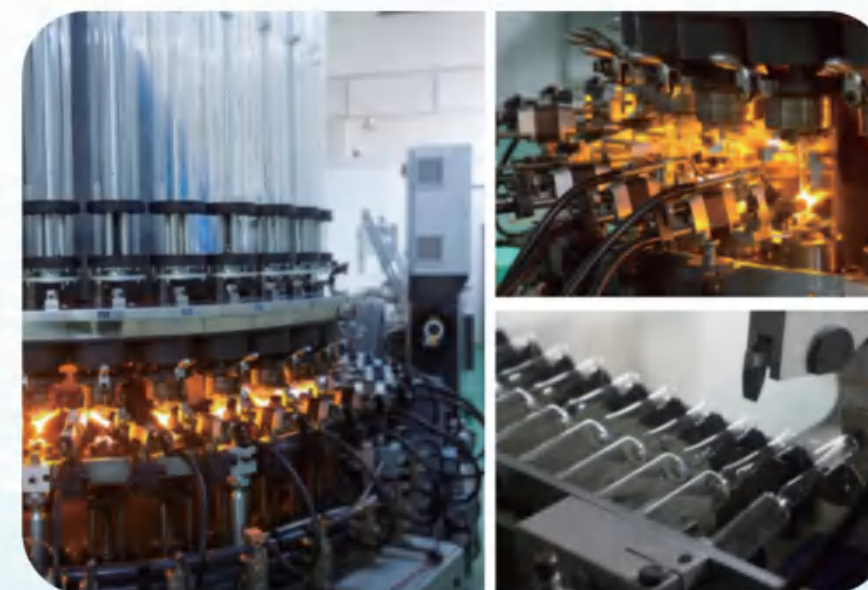
## Product Details:

- Produced from Type I glass tubing supplied by leading glass tube manufacturer.
- Available in clear and amber
- Range of ampoules from 1ml to 30ml
- CBR(colour break ring) or OPC(One point Cut) opening
- Up to 2 code rings can be applied for identification purposes
- Ceramic prints are available with a wide range of heavy metal free colours
- Packaging in clean-room conditions in fiber-free cartons or PP boxes
- Size Type: type B , type C, type D
- Standard: YBB standard or ISO



| ISO Form B Glass Ampoule |         |       |                 |         |         |                 |                    |       |                     |                |                                   |      |         |                        |       |                    |
|--------------------------|---------|-------|-----------------|---------|---------|-----------------|--------------------|-------|---------------------|----------------|-----------------------------------|------|---------|------------------------|-------|--------------------|
|                          | Body d1 |       | Constriction d2 | Bulb d3 | Stem d4 | Total height h1 | To constriction h4 |       | To gauging point h5 | Body height h6 | Centre of constriction to bulb h7 |      | Raius r | Body wall thickness w1 |       | Stem at gauging w2 |
|                          | Nom.    | Tol.  |                 |         |         |                 | Nom.               | Tol.  |                     |                | min.                              | max. |         | Nom.                   | Tol.  |                    |
| 1ml                      | 10.75   | ±0.15 | ±0.50           | ±0.50   | ±0.35   | ±0.50           | 25.50              | ±0.50 | ±2.00               | 21.00          | 4.50                              | 1.00 | 0.50    | ±0.03                  | ±0.05 | 0.37               |
| 2ml                      | 10.75   | ±0.15 | ±0.50           | ±0.50   | ±0.35   | 72.00           | 37.50              | ±0.50 | ±2.00               | 33.00          | 4.50                              | 1.00 | 0.50    | ±0.03                  | ±0.05 | 0.37               |
| 5ml                      | 14.75   | ±0.17 | ±0.50           | ±0.50   | ±0.35   | 83.00           | 46.50              | ±0.50 | ±2.00               | 41.00          | 5.50                              | 1.50 | 0.55    | ±0.04                  | ±0.05 | 0.40               |
| 10ml                     | 17.75   | ±0.20 | ±0.50           | ±0.50   | ±0.35   | 102.00          | 62.00              | ±1.00 | ±2.00               | 55.00          | 6.00                              | 2.00 | 0.60    | ±0.04                  | ±0.05 | 0.47               |
| 20ml                     | 22.50   | ±0.25 | ±0.50           | ±0.50   | ±0.35   | 113.00          | 76.00              | ±1.30 | ±2.00               | 65.00          | 6.50                              | 2.50 | 0.70    | ±0.04                  | ±0.05 | 0.50               |

## Product line >>>



## Neutral Borosilicate Glass Tube 5.0 >>>

Package: corrugated cartons /plastic films/carton+pallet

Color: clear and dark amber



### Physical and chemical data

| No | Physical & Chemical Performance                     | Data                           |
|----|---|--------------------------------|
| 1  | Coefficient of mean liner expansion(20 °C ;300 °C ) | $(5.0\pm 0.5)\times 10^{-6}/k$ |
| 2  | Transformation temperature                          | 560±15 °C                      |
| 3  | Softening point                                     | 780±10 °C                      |
| 4  | Working point                                       | 1150±20 °C                     |
| 5  | Density at 20 °C                                    | 2.30±0.02g/m <sup>3</sup>      |
| 6  | Hydrolytic resistance(ISO 720)                      | HGA1                           |
| 7  | Acid resistance(DIN 12116)                          | Class S1                       |
| 8  | Alkali resistance(ISO 695)                          | Class A2                       |

### Chemical composition

| Items | SiO <sub>2</sub> | B <sub>2</sub> O <sub>3</sub> | Al <sub>2</sub> O <sub>3</sub> | CaO | BaO | K <sub>2</sub> O | Na <sub>2</sub> O | Fe <sub>2</sub> O <sub>3</sub> |
|-------|------------------|-------------------------------|--------------------------------|-----|-----|------------------|-------------------|--------------------------------|
| Data  | 73.5             | 10.6                          | 6                              | 1.2 | 0.8 | 0.6              | 7                 | <400ppm                        |

## Application >>>

### Ampoule



Strong chemical resistance ensures that the drug in ampoules remains safe at all times. Its excellent surface properties provide permanent protection to the contents

### Tubing for vials



Whether drugs are stable and effective over the long term depends on the materials from which they are made. Excellent chemical resistance ensures optimum protection of the contents against premature aging and failure.

### Tubing for syringes



Low geometric tolerances of neutral tubing are vital in the production of pre-fillable syringes.

### Tubing for cartridges



The resistance of neutral tubing to compressive stress makes it the first choice for cartridges. Narrow geometrical tolerances are not only beneficial to the processing and converting process. But also boost the functionality of the cartridges when used in pen or pump systems.

## Borosilicate Glass tube 7.0 >>>

Package: corrugated cartons /plastic films/carton+pallet

Color: clear and light amber



### I Clear and amber Glass tubing physical and chemical data

| No | Clear   |                                | VS | Amber   |                                |
|----|---|--------------------------------|----|---|--------------------------------|
|    | Physical & Chemical Performance                 | Data                           |    | Physical & Chemical Performance                 | Data                           |
| 1  | Coefficient of mean liner expansion(20°C;300°C) | $(7.1\pm 0.5)\times 10^{-6}/k$ |    | Coefficient of mean liner expansion(20°C;300°C) | $(7.1\pm 0.5)\times 10^{-6}/k$ |
| 2  | Transformation temperature                      | 550±15°C                       |    | Transformation temperature                      | 520±15°C                       |
| 3  | Softening point                                 | 750±10°C                       |    | Softening point                                 | 730±10°C                       |
| 4  | Working point                                   | 1110±20°C                      |    | Working point                                   | 1080±20°C                      |
| 5  | Density at 20°C                                 | 2.45±0.02g/m <sup>3</sup>      |    | Density at 20°C                                 | 2.47±0.02g/m <sup>3</sup>      |
| 6  | Hydrolytic resistance(ISO720)                   | First class                    |    | Hydrolytic resistance(ISO720)                   | First class                    |
| 7  | Acid resistance                                 | First class                    |    | Acid resistance                                 | Second class                   |
| 8  | Alkali resistance                               | Second class                   |    | Alkali resistance                               | Third class                    |

### Chemical Composition(%)

| Color | SiO <sub>2</sub> | B <sub>2</sub> O <sub>3</sub> | Al <sub>2</sub> O <sub>3</sub> | CaO | BaO | K <sub>2</sub> O | Na <sub>2</sub> O | Fe <sub>2</sub> O <sub>3</sub> | MgO  |
|-------|------------------|-------------------------------|--------------------------------|-----|-----|------------------|-------------------|--------------------------------|------|
| Clear | 70.2             | 7.01                          | 5.7                            | 3.5 | 2   | 2.3              | 9                 | 0.05                           | 0.06 |
| Amber | 70               | 6.6                           | 6.2                            | 3.3 | 2   | 2.08             | 9.4               | 0.08                           | 0.06 |

### Specification of clear and amber tubing for making ampoules (unit: mm)

| Spec | Outer Diameter Of Glass Tube |                 | Wall Thickness of Glass Tube |                 |
|------|------------------------------|-----------------|------------------------------|-----------------|
|      | Basic Size                   | Deviation Limit | Basic Size                   | Deviation Limit |
| 1    | 10.75                        | ±0.15           | 0.50                         | ±0.03           |
| 2    | 10.75                        | ±0.15           | 0.50                         | ±0.03           |
| 3    | 12.75                        | ±0.15           | 0.50                         | ±0.03           |
| 5    | 14.75                        | ±0.15           | 0.55                         | ±0.03           |
| 10   | 17.75                        | ±0.20           | 0.60                         | ±0.04           |
| 20   | 22.50                        | ±0.25           | 0.70                         | ±0.04           |
| 25   | 22.50                        | ±0.25           | 0.70                         | ±0.04           |
| 30   | 22.50                        | ±0.25           | 0.70                         | ±0.04           |

### Specification of clear and amber tubing for making vials (unit: mm)

| Outer Diameter |           | Wall Thickness |           | Length     |           | Straightness       |      |
|----------------|-----------|----------------|-----------|------------|-----------|--------------------|------|
| Basic Size     | Deviation | Basic Size     | Deviation | Basic Size | Deviation | Measuring Distance | ≤    |
| 16.00          | ±0.018    | 1.00           | ±0.03     | 1000-2000  | ±6.00     | 1000               | 2.5‰ |
| 16.25          | ±0.18     | 1.00           | ±0.03     |            |           |                    |      |
| 18.40          | ±0.2      | 1.00           | ±0.03     |            |           |                    |      |
| 22.00          | ±0.22     | 1.10           | ±0.03     |            |           |                    |      |
| 24.00          | ±0.22     | 1.10           | ±0.03     |            |           |                    |      |
| 26.00          | ±0.28     | 1.20           | ±0.03     |            |           |                    |      |
| 28.00          | ±0.28     | 1.20           | ±0.04     |            |           |                    |      |
| 32.00          | ±0.30     | 1.30           | ±0.04     |            |           |                    |      |

## Rubber Stopper >>>

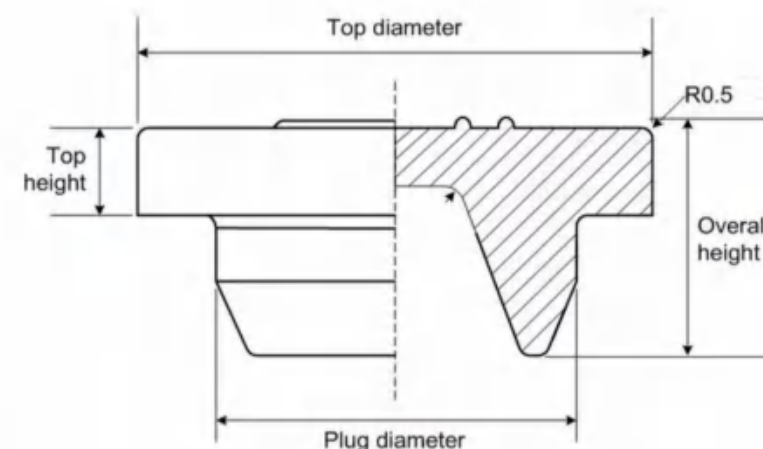
Specifications: 13MM 20MM 24MM 26MM 28MM 32MM 34MM

Material: Butyl rubber

Color: Grey or customized

Sterilization: ethylene oxide (EO) sterilization

Packaging: Sterilized bag and cartons



This drawing is just sketchy drawing, if you need detailed drawing, please contact us.

| Specificaton | Top Diameter | Top height | Plug diameter | overall height |
|--------------|--------------|------------|---------------|----------------|
| 13-A         | 12.5±0.2     | 2.2 ±0.25  | 7.50±0.1      | 6.5±0.3        |
| 13-A1        | 12.5±0.2     | 2.0 ±0.25  | 7.50±0.1      | 6.7 ±0.3       |
| 20-A/AS      | 18.8±0.2     | 3.3±0.25   | 13.2 ±0.1     | 8.8 ±0.3       |
| 20-B2/B2+    | 19.5±0.2     | 3.0±0.25   | 13.0±0.1      | 8.7±0.3        |
| 13-D2        | 12.5±0.2     | 2.2 ±0.25  | 7.5±0.1       | 9.6±0.3        |
| 20-D2        | 18.8 ±0.2    | 3.3 ±0.25  | 13.2 ±0.1     | 13.8±0.3       |
| 20-D3        | 18.8 ±0.2    | 3.3 ±0.25  | 13.2 ±0.1     | 13.5±0.3       |
| 24-B         | 23.5±0.3     | 3.6 ±0.3   | 14.0±0.2      | 10.2±0.4       |
| 26-B         | 25.5±0.3     | 3.8 ±0.3   | 15.2 ±0.2     | 11.0±0.4       |
| 28-B         | 26.6 ±0.3    | 3.8 ±0.3   | 18.0±0.2      | 11.8±0.4       |
| 28-B1        | 26.6 ±0.3    | 3.8 ±0.3   | 20.5±0.2      | 10.8±0.4       |
| 32-A         | 30.8 ±0.3    | 4.0 ±0.3   | 23.6±0.2      | 12.2±0.4       |
| 32-A1        | 30.8±0.3     | 5.0 ±0.3   | 24.2±0.2      | 16.0±0.4       |
| 34-A         | 33.6±0.3     | 4.6 ±0.3   | 26.2±0.2      | 14.6±0.4       |

## Aluminum cap >>

specification: 13mm, 20mm, 28mm, 32mm

standard: ISO standard

color: any color available

logo and text can be printed



## Aluminum plastic cap >>





**Jinan Snail Glass** mainly produces borosilicate glass injection vials, siliconized vials, ampoules and cartridges with high hydrolytic resistance and outstanding tolerance. They are the first choice of pharmaceutical packaging for biologics, lyophilization, vaccines and blood preparation. Every year we provide innovative products and solutions for more than 300 domestic and international customers, most of whom are famous pharmaceutical enterprises and are using millions of our products everyday. With markets having spread over Asia, America and Eastern Europe, we will work on research and development of high quality pharmaceutical packaging products, aiming to achieve product upgrade and overseas market expansion, and to be an important member in global pharmaceutical packaging industry.

We warmly welcome customers to discuss cooperation.





济南思耐尔国际贸易有限公司  
Jinan Snail International Co., Ltd

④ ADD: NO. 22-1802, CREATIVE INDUSTRIAL PARK,  
TANGYE WEST ROAD, JINAN, SHANDONG, CHINA  
☎ TEL: +86 53188985420 +86 15098871450  
🌐 WEB: [www.snailglass.com](http://www.snailglass.com)  
✉ E-mail: [mary@snailglass.com](mailto:mary@snailglass.com)



济南思耐尔国际贸易有限公司  
Jinan Snail International Co., Ltd

[www.snailglass.com](http://www.snailglass.com)