

10

&\$%+

"

"

4

8

2016

4

"

"

"

3D

" "

" "

"

17

32

2016

2017

/

6

"

" "

"

"

" "

" "

" "

" 17

17-33

28750

1.

1.1

1-2

2-3

20

8

2

1-2

2017-2020

1-2

,

2.

2.1

3D

2.1.1

3D

3D

3D

"

"

3D

3D

3D

"

"

5

3D

2-3

3D

2-3

3D

1-2

:

0.015ml/s

10000 /s

0.2mm

60

>90%

8

2017-2020

1-2

(

)

2:1

2.2

2.2.1

GMP

1

CFDA

CFDA

FDA

≤0.1%

≥100KPa

ISO10993

CFDA

6

2

5

2017-2020

1-2

(

)

2:1

2.3.2

2

4

20

2017-2020

1-2

(

)

2:1

2.4

2.4.1

3-4

CFDA

2-3

2

CFDA

1-2

6

2017-2020

1-2

,

(

)

2:1

3.

3.1

3.1.1

-

-

-

3

3-6

1

CFDA

4

2017-2020

1-2

,

(

)

3:1

3.1.2

2

50

1

CFDA

/

8

2-3

5

20

2017-2020

1-2

,

(

)

2:1

3.2

3.2.1

CFDA

6

2

2-3

2017-2020

1-2

(

)

3:1

3.3

3.3.1

5%

16F

30%

5

CFDA

2

2017-2020

1-2

(

)

3:1

3.4

3.4.1

$25\mu \text{ g/cm}^3$

CFDA

$\times 7\text{mm}$

$3\text{mm} \times 5\text{mm}$

CFDA

1800

MPa

50 MPa

5%

40 N/mm

CFDA

CFDA

2017-2020

1-2

(

)

3:1

3.5

3.5.1

2-3

CFDA

1

85%

0.4mg/ml

90%(0.25mg/ml)

5%

10%

2

IL-1

IL-6

IL-8

IL-10

70-85%

TNF-

75%

3

2-

2-

85%

1.5mg/ml

C

85%

10%

2-

2%

15%

6

CFDA

2-3

2017-2020

1-2

(

)

3:1

3.6

3.6.1

/

1-2

CFDA

1-2

GMP

6

2017-2020

1-2

(

)

3:1

3.6.2

3

CFDA

GB/T19976-2005

8%-15%

8%-15%

30%

4

1

2017-2020

1-2

, ()

3:1

4.

4.1

1

- -

(SEBS)

- -

(SEIS)

-

-

(SEPS)

2

1

5

5.0%

2

1200 cm³/(m²

24h 0.1MPa)

20 N/15mm

75%

5-7

CFDA

2-4

2

99.9%

1.2

/

/

CFDA

2

10

3

2017-2020

1-2

,

(

)

4:1

5.

5.1

3

1.

2.

3D

3.

3

2017-2020

1-2

(

)

1:1

6.

6.1

1

CFDA

2

10-20

15

2020

60

3

4

5

2017-2020

1

30%

1

,

(

)

8:1

.

1.

4

6

2.

3.

1-2

1

2