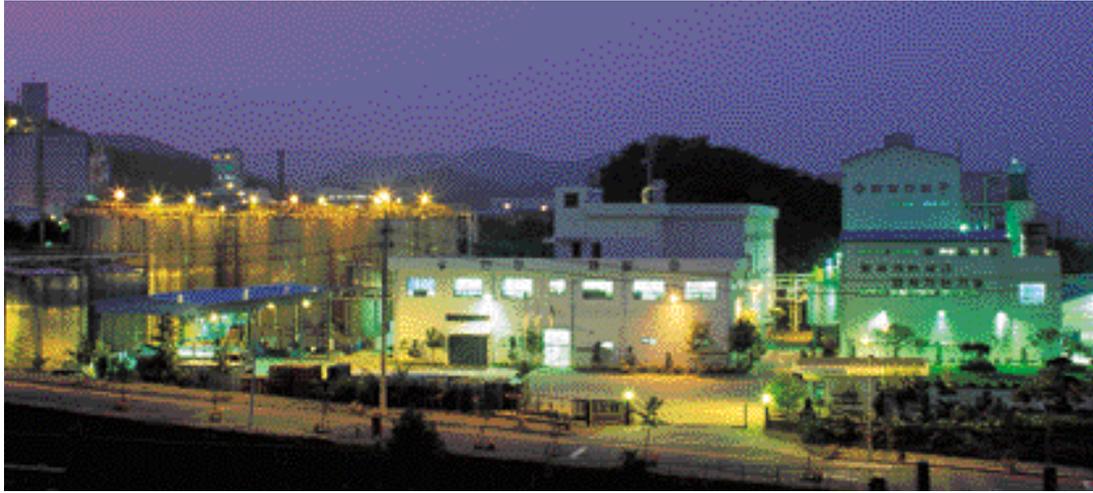


1982 20 2010 1500
 가
 Royal Dutch Shell 50 50 Shell
 1 500 1994 4 , 1997 7 AMDU(Active
 Matter Drying Unit)



1998
 Royal
 Dutch
 Shell

2001
 1

Sulfonation 가 3 6000 3 6 6000 ,
 AMDU 1 1000 , 6300 8 3300
 1998 250 2002 628 ,
 2003 619 2004 770
 1990 500 , 1995 1000 , 2002 2600
 , 2004 3000

R&D

1990
 ,
 110 가 20
 3-4
 7
 1994 8
 2000 10

R & D

(: 100 , %)

1999	2000	2001	2002	2003
43 642	45 139	3.4 60 005	32.9 62 808	4.7 61 898
2 594	2 666	2.8 2 385	10.5 3 457	45.0 4 113
770	1 544	100.5 1 225	20.7 2 097	71.2 2 209
719	1 177	63.7 1 018	13.5 1 583	55.5 1 654
±2002 1300	가 2003	569	6700	2002 582

가

AMDU () , Blending (Pearl EQ IMQ , Blending) , Bead 가
 Sulfonation 가

2004 R & D Specialty Chemicalty 13%

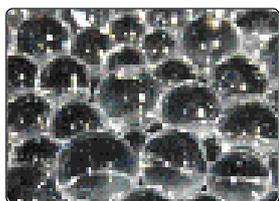
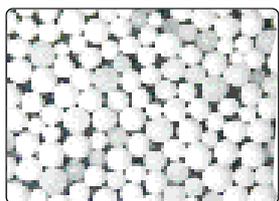
2005 12 27 3900 5

1994

50 PNC 2004 6

50

ASCO-HISOB



IMF

1998

2002

60-70%

2004

780

2003

20%

2005

850

, 2010

1500

2004 1000 30

(HISOB) 가

가 가 가

가 1000

HISOB(High Absorbent Polymer Bead)

