

$\langle \text{TiO} \rangle$

가 “ ”
Dupont · SCM 가

80 20 가 가

가

가

(Rutile) (: M/T, %)									
		1991		1992		1993		1994()	
Dupont		20,967	53.0	22,000	45.5	24,000	42.5	26,000	40
SCM		8,308	21.0	9,000	18.6	10,000	17.7	12,350	19
TIOXIDE		4,747	12.0	7,000	14.5	7,000	12.4	9,100	14
Ishihara		3,598	10.0	5,000	10.3	6,000	10.6	8,450	13
Kerr McGee		1,580	4.0	3,000	6.2	6,000	10.6	8,450	13
Kronos				600	1.3	640	1.1	850	1
Bayer				200	0.4	170	0.3		
				1,525	3.2	2,690	4.8		
		39,560	100.0	48,325	100.0	56,500	100.0	65,000	100.0

가

7

5

가

가

가

가 가

가

80

가

가

가

가

가

가

가

가

가

80

가

2400

89

가

92

79

80%

가

, 1550

가

TiO ₂		(: 1000M/T)
Ishihara Sangyo	Yokkaichi	146.4
Tokem Products	Akita	18.8
Teika	Okayama	50.4
Titanium Kogyo	Ube	16.8
Sakai Kagaku Kogyo	Onahama	43.2
Fuji Titanium Kogyo	Kobe and Hiratsuka	16.2
Furukawa Kikai Kinzoku	Osaka	21.6
		313.4

TiO ₂		(: M/T)			
		1991	1992	1993	1994
		6,800	8,800	9,000	13,000
	"	2,000	2,000	2,500	3,300
		3,500 350	4,000	4,000	4,500
		2,900	3,000	4,000	4,500
	"	1,300	1,300	1,400	1,000
	"	420	560	550	
	"	1,500	1,800	1,800	2,000
	"	1,400	1,800	2,000	
	"	900	1,200	1,300	
	"	550	500		
	"	330	200		
	"	280	80		
	"	220	-		
	"	220	-		
	"	130	-		
		450	300		
		400	450		
		-	2,000		
		-			

가
Shortage가
80
%
가
가
가
가
4.9%

TiO ₂ (1991 ~ 1995) (: 1000M/T)				
1991	Dupont	DeLisle, Mississippi-	Chloride	90
	Tiwest	Kwinana, Australia	Chloride	54
	Cristal	Yanbu, Saudi Arabia	Chloride	50
1992	SCM	Ashtabula - , Ohio	Chloride	50
	Kronos	Lake Charles, LA	Chloride	80
	Tioxide	Malaysia	Sulfate	50
1993	Dupont	Taiwan	Chloride	60
1994	Tioxide	Canada	Chloride	Canceled
1995	None			0
				434

TiO ₂ (: M/T)				
	石原産業	105	50	155
		60		60
		43		43
		30		30
	古河機械金屬	23		23
		17		17
	富士	16		18
		294	50	344
	Dupont	0	776	776
	SCM	66	163	229
	NL	0	150	150
	KEMILA	58	91	149
	Kerr-McGee	0	101	101
		124	1,281	1,405
	TIOXIDE	370	80	450
	NL	126	120	246
	Bayer	150	0	150
	THANN	125	0	125
	SCM	10	85	95
	SACHTLEBEN	85	0	85
	KEMIRA	80	0	80
	TDF	0	45	45
		946	330	1,276
	TIOXIDE	85	0	85
	石原産業	26	45	71
	SCM	0	70	70
	Dupont	0	60	60
	Kerr-McGee	0	54	54
		15	0	15
		15	0	15
	C H I N A	10	0	10
	METAL	151	229	380
		226	93	319
		1,741	1,983	3,724

95 2300 , 96 3 15% . 94 93 15%

94 65 , 65%, 25%, 10%

50% 23%, 17%

가 가

94 93 2

(: 1000M/T)		
	Reserves	Reserves base
	300	1,400
	66,000	86,000
	-	21,000
	2,500	2,500
	2,500	23,500
	100	100
	2,000	2,000
	3,600	4,500
	5,700	6,600
	4,400	4,400
	800	800
	5,200	5,200
	5,300	14,000
	85,000	136,700

(: 1000M/T)		
	Reserves	Reserves base
	27,000	73,000
	7,800	33,000
	34,800	106,000
	1,600	1,600
	1,600	1,600
	1,400	1,400
	-	9,000
	32,000	90,000
	5,900	13,000
	39,300	113,400
가	-	1,400
	-	15,000
	2,300	2,300
	1,000	1,000
	36,000	45,000
	39,300	64,700
	30,000	41,000
	31,000	31,000
	-	1,000
	3,600	3,800
	64,600	76,800
	24,000	45,000
	203,600	407,500

McGee Dupont SCM

McGee Dupont

Dupont, SCM, TIOXIDE, Ishihara, Kerr

TIOXIDE Ishihara, Kerr

80 SCM TIOXIDE

13%, 5% Dupont 38%, SCM 13%, Ishihara 13%, Kerr McGee

TiO ₂ () (: M/T, %)						
	1991		1992		1993	
	103,585	4	97,026	9	81,780	13
	3,247	3	3,471	1	3,155	9
	4,814	1	4,840	1	4,594	6
	38,934		37,445	4	35,904	4
	19,240	7	20,255	5	19,222	5
	18,933	5	17,454	8	17,410	
	2,615	16	1,504	42	1,894	26
	20,420	1	18,629	9	17,676	5
	211,968	3	197,624	7	181,590	8

() (: M/T)					
	1987	1992	1997	92/87	97/92
	1,120	1,272	1,487	2.6	3.2
	773	881	1,000	2.7	2.6
	541	673	854	4.5	4.9
	308	231	273	5.6	3.4
	141	166	217	3.3	5.5
	71	87	109	4.1	4.6
	2,954	3,310	3,940	2.3	3.5

Dupont 22%, SCM 14%, Korons 11%, Kerr McGee 5%, Ishihara 5%

Ishihara

94 4/4 1850

가

가 94 100 3/4 30

가

가 가

가 100 1950 , 2000 , 2300 ,

2000

94 가 94 94

93 94 가 , 가

94

가

95 가 가 가

95 가 2300

94 95

95 가 3000

95 94 16% 7 7000

18

가 가가

80 Dupont, SCM

가

	()			(: M/T, %)	
	1987	1992	1997	92/87	97/92
	1,782	1,955	2,305	1.9	3.3
	477	582	723	4.1	4.4
	381	434	528	2.6	4
	314	339	384	1.5	2.5
	2,594	3,310	3,940	2.3	3.5

	(: M/T)
	929,830
Titania A/S	520,127
Malaysian Tin Mining Cos.	460,000
State organisations, USSR	390,000
Renison Goldfields Consolidated	369,000
Westralian Sands Ltd.	281,000
Cable Sands Pty.	256,000
Dupont	230,000
Sri Lanka Mineral Sands Corp.	107,254
Ravensthorpe Mining & Investment	100,000
Rutile e Ilmenita do Brasil	80,000
Nuclemon	55,000
Sierra Rutile Ltd.	128,198
Consolidated Rutile Ltd.	106,146
Renison Goldfields Consolidated	97,000
Richards Bay Minerals	55,000
Mineral Deposits Ltd.	35,000
RZ Mines	30,562
Kerala Minerals	8,200
Sri Lanka Mineral Sands Corp.	5,589
QIT	832,000
Richards Bay Minerals	700,000
KSI Ilmenittsmeltverket	104,000

Dupont , SCM LG , Ishihara

가

가
가

3.5% , 99
94 300 , 93 3.5%
94 가 . 93
가 90%
가
가
60
50 가 10 가
93 Dupont 6 SCM 96 Dupont TIOXIDE가 97 18
, 11 5 2000
3 가 97
가
가 95%
85%
93 56% 2002 35 40% 85 65%
가 2 92 65%
94 140 93 6%
가 3.2%
가 93 6% 가 1955 95 2200
97 4.9%
가
93 92 4% 181 25.9% 가
6 2400 2% 가 8472 4%
95
가
87 75% 가 가

3.4% 가 .

2000

372 , , 3 , 127 6000 34% , 가 37%

85 65% 171 1000 198

3000 . (

54.5%) , (95.5%) 가 가 ,

4 ,

가 가 가가

가 가

TIOXIDE 가 Dupont, SCM, NL , Kerr McGee,

M & A 가

Dupont 8 가

95%

90%

9 가 가

가

40% (1900 800), 7%

Cooljarloo, Horsham, Scott River Yoganup

10% 가

Renison Gold Fields consolidate(RGC), Cable
Sands Pty, Consolidated Rutile, Mineral Deposits, RZ Mines Pty, Westralian Sands

87 5 4000 , 318 6000 , 8650

0.6%, 0.13%

Nuclebras de Monazita et Asociades Rutilo e Limenita do Brasil

(RIB)

QIT 가 1
78% 가 340
1/4

Panzhihua

Panzhihua Panzhihua iron and Steel

SCM Inyernatoinal Enestech

Zygong 13

2000

3000

4 8400

700

2500 가

< 1995/3/20>