

3.

()

- 1.
- 2. VOCs
- 3. VOCs
- 4. VOCs
- 5.

1.

가 , 가
가

(Volatile Organic Compounds: VOCs
) 가 ,
(NOx)

2
VOCs .
가

VOCs

가

VOCs

VOCs

가

가

가

VOCs

가

VOCs

VOCs

가

VOCs

가

가

VOCs

II. VOCs 特性

VOCs

VOCs

VOCs

VOCs

VOCs

1. VOCs 分類 危害性

, 半 , 非

< 1>

< 1>

		-	
		-	
K_{oc}			
K_{ow}			
(BCF)			

VOCs

가

가

VOCs

VOCs

VOCs

10^{-2} kPa

0.02 psia

100 °C



< 1>

·
·
VOCs
· , ·
· 가 (Paraffin),
(Olefin) · VOCs
(Benzene), (Toluene), (Xylene)
(Isoproyl alcohol) (Glycol ethers) ·
VOCs · ,
· ,
· 가 (Ethene)
(Acroleins) , (Alkanes),
(Higher alkenes), (Aromatics), (Ethers)
(Alcohols)
(Ketones)가 ·
VOCs 가 · , VOCs가
· , ·
· , ·
· VOCs

· < 2>

VOCs · ,
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< 3 >

< 2 >

VOCs

Acetaldehyd	Dizaomethane	2-Nitropropane
Acetamide	1,4-Dichlorobenzene	Phenol
Acetonitrile	Diethanolamine	Phenylene diamine
Acetophenone	Diethyl sulfate	Propionaldehyde
Acrolein	Dimethyl sulfate	Propylene oxide
Acrylamide	Epichlorohydrin	Styrene
Acrylic acid	Ethyl acrylate	Styrene oxide
Acrylonitrile	Ethyl benzene	1,1,2,2-Tetrachloroethane
Allyl chloride	Ethylene dichloride	Tetrachloroethylene
Aniline	Ethylene oxide	Toluene
Benzene	Formaldehyde	2,4-Toluene diamine
Benzotrichloride	Hexane	1,2,4-Trichlorobenzene
Benzyl chloride	Methanol	Trichloroethylene
1,3-Butadiene	Methyl chloride	Triethylamine
Caprolactam	Methyl ethyl ketone	2,2,4-Trimethylpentane
Chlorobenzene	Methyl methacrylate	Vinyl acetate
Chloroform	Methyl-t-butyl ether	Vinyl bromide
Chloroprene	Methylene chloride	Vinylidene chloride
Cresols	Nitobenzene	Vinylidene chloride
Cumene	4-Nitrophenol	Xylenes

: Patrick(1994), Toxic Air Pollution Handbook, New York, Van Nostrand
Reinhold

< 3 >

VOCs

Methane	Trifluoromethane(CFC-23)
Ethane	1,1,1-Trichloro-2,2,2-trofluoroethane(CFC- 113)
Metylene chloride(dichloromethane)	CFC- 114, CFC- 115
1,1,1-Trichloroethane(methyl chloroform)	HCFC- 123, HCFC- 124, HCFC- 14 1b,
Trichlorofluoromethane(CFC- 11)	HCFC- 142b, HFC- 125, HFC- 134,
Dichlorodifluoromethane(CFC- 12)	HFC- 134a, HFC- 143a, HFC- 152a
Chlorodifluoromethane(CFC-22)	4 perfluorocarbon

: Patrick(1994), Toxic Air Pollution Handbook, New York, Van Nostrand Reinhold

2. VOCs 排出原

VOCs

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가 , (Vegetation)

, (Grasses)

가

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가

1

가 ,

VOCs 가 ,

가

가

< 4> VOCs ,

가 , VOCs

< 4> VOCs

		(/)	(%)
		4	3
	•	47	35
		26	20
가		33	25
	가	3	2
		5	4
		15	11

: Warneck(1988), Chemistry of Natural Atmosphere, Academic Press

3. VOCs

1.

VOCs

가

VOCs

가

VOCs

VOCs

가

VOCs

< 5 >

,

VOCs

42.7%

가

,

28.5%

< 5> 1994

VOCs

		(/)	(%)	
		7,687	1.5	
		21,889	4.3	
		23,366	4.6	
		52,942	10.4	
		11,445	2.3	
		129,926	25.7	
		14,288	2.8	
		144,154	28.5	
		24,544	4.9	
		4,783	0.9	
		2,829	0.6	
		14,220	2.8	
		15,200	3.0	
•		19,451	3.8	
		38,485	7.6	
			3,555	0.7
			10,248	2.0
			13,803	2.7
			36,988	7.3
	•		2,226	0.4
	가		9,530	1.9
	가		32,040	6.3
			22,734	4.5
			1,249	0.3
			8,895	1.8
			49,780	9.9
			207,153	42.7
			505,315	100.0

: (1996), 가 (II),

2.

VOCs

. 2000 VOCs 50% ,

VOCs

1995 12 29 1999 1 1

. VOCs , ,

가

VOCs

VOCs

VOCs

VOCs

IV. VOCs

1.

1960 VOCs

VOCs 1970 . VOCs

, .

1970 VOCs 42.3% ,

1993 26.1% . ,

가 가 , , 가 . .

VOCs .

VOCs .

VOCs , . .

VOCs .

VOCs .

1990 . 5

州 10

VOCs 州

州 .

州 가 VOCs

VOCs .

2. VOCs VOCs

VOCs

VOCs



가

VOCs

VOCs

V. VOCs

28 2 VOCs

VOCs

VOCs

VOCs

VOCs

1. 問題點

(1) VOCs

1996

VOCs

가

VOCs

(2) VOCs (39)

VOCs

VOCs

(3) VOCs

2000

VOCs

50%

量

量的

VOCs

가

(4) VOCs

VOCs

VOCs

(5)

VOCs

VOCs

VOCs

가

(6)

VOCs

, 가

VOCs

2.

(1) VOCs

VOCs

VOCs

VOCs

가

VOCs

가

,

가

VOCs

가

(2)

VOCs

VOCs

VOCs

VOCs

VOCs

VOCs

(3)

1993

VOCs

VOCs

VOCs

VOCs



, VOCs .
 . VOCs 가
 . VOCs
 , VOCs

(4) VOCs .
 VOCs VOCs
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(5)
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 VOCs 가
 가 . VOCs
 .
 VOCs VOCs

(6) VOCs 提高
 가 VOCs



가

VOCs

(7)

VOCs

VOCs

가

VOCs

VI. 結論 提言

VOCs

가

VOCs

VOCs

VOCs

가

VOCs

가



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· VOCs
가
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· VOCs
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