

Emission Control Standard for Industrial Enterprises Volatile Organic Compounds

2014-07-31

2014-08-01

20

20

1

2

GB/T 15089

GB/T 16157

GB 16297

HJ/T 55

HJ/T 76

HJ/T 397

HJ 583

HJ 584

HJ 644

/	-		
/		-	
	-	/	-
39			

3

3.1 volatile organic compounds

293.15K

10Pa

VOCs

3.2 standard state

273.15K

101325Pa

3.3 maximum allowable emission concentration

1h

	1h	mg/m ³	
3.4	maximum allowable emission rate		
	1h		kg/h
3.5	emission pipe height		
3.6	volatile organic liquid		
	10%		
3.7	leak sources and fugitive emission sources		
	VOCs	/	
	VOCs	/	
	VOCs		
1	/		
2			:
293.15K	300Pa	293.15K	300Pa VOCs
3	/		
3.8	VOCs VOCs portable monitor instrument		
		VOCs	
3.9	background concentration		
	VOCs	1~2m	VOCs
	VOCs		
	25cm		
3.10	leak detection net value		
	VOCs	VOCs	
	ppmv		
3.11	leakage		
			VOCs
3.12	inaccessible component		
	5m		2m

DB12/ 524-2014

- 3.13 true vapour pressure
- 293.15K ()
- ()
- 3.14 fugitive emission
- 3.15 concentration limit at perimeter reference point
- 273.15K 101325Pa HJ/T 55
- 1h mg/m³
- 3.16 exist enterprises
- 3.17 new established enterprises
- 3.18 unit perimeter

4

4.1 VOCs

- 4.1.1 2015 12 31 1
- 2016 1 1 2
- 4.1.2 2

1

1

					kg/h				
				mg/m ³	15m	20m	30m	40m	50m

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1

			mg/m ³	kg/h				
				15m	20m	30m	40m	50m
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
1	GB 16297			GB 16297				

✓ 2

1

			mg/m ³	kg/h				
				15m	20m	30m	40m	

DB12/ 524-2014

2

			mg/m ³	kg/h				
				15m	20m	30m	40m	50m
	VOCs	VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
		VOCs						
1	GB 16297			GB 16297				

4.2 VOCs

4.2.1 2015 12 31 3 VOCs



a
b
c
d
e
4.3.2.3 VOCs
a
b
c
4.3.2.4
a
b
4.3.3
4.3.3.1
a
1
2
3
b
100m³
1
2
3
c
d

2015 12 31
2016 1 1
VOCs
VOCs
VOCs

4

ppmv		
/ /	5000	2000
	1000	500

VOCs

5

VOCs

76000Pa 100m³
500 m³
2800Pa 76000Pa 100m³
500 m³
100m³ 413.15K
2000ppmv()

DB12/ 524-2014

1
2
3
4

e
4.3.3.2
a

3
b

VOCs VOCs

90

4.3.3.3

2800 Pa

4.3.4 VOCs

10 cm VOCs 300ppmv

4.4 VOCs

VOCs 5

5

mg/m³

				VOCs
	0.2	0.8	0.5	2.0
1	0.1	0.6	0.2	2.0
1				

4.5 VOCs

VOCs A

4.6 VOCs

4.6.1 15m 15m
B 50%

4.6.2

B

B

4.6.3 200m 5m
4.6.4 VOCs B 50%
VOCs

C

5

5.1
5.1.1

5.1.2

5.1.3 VOCs VOCs VOCs

5.1.4 VOCs 5%O₂
VOCs 10%O₂

5.2

5.2.1 VOCs GB/T 16157
5.2.2 GB/T 16157 HJ/T 397
5.2.3 VOCs 6

6 VOCs

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1

VOCs D¹



5.3 VOCs

5.3.1

1993

5.3.2 VOCs

VOCs

1m VOCs

5.3.3 VOCs

10cm

VOCs

5.3.4

3

3

VOCs

3

5

~10

3m/s

5.4

5.4.1

HJ/T 55

5.4.2

7

7

			HJ 583
			HJ 584
	VOCs		HJ 644
			D

5.5

5.6

VOCs

5.6.1

VOCs

VOCs

1 2
 (m^2) (m^2) $(kg)/($ (m) $(kg/m^3))$ 1
 (m^2) $(kg)/($ (m) $(kg/m^3))$ 2

5.6.2

VOCs

3

VOCs

I O₁ O₂

3

I

料

VOCs

kg/

				DB12/ 524-2014
	O ₁	VOCs		kg/
	O ₂	VOCs		kg/
5.7				
6				

			A		
		VOCs			
A.1 VOCs				VOCs	
	VOCs				
			VOCs		
A.2					
A.2.1					
		VOCs			
VOCs					
A.2.2			VOCs		
A.2.2.1					
A.2.2.2					
A.2.3					
VOCs					
A.2.3.1					
A.2.3.2					UV
		VOCs			
A.2.3.3					UV
A.2.3.4					
A.2.3.5	VOCs				
A.2.3.6					
A.2.3.7	VOCs				
			VOCs		
A.3					
A.3.1		VOCs			
A.3.2 VOCs			VOCs		
				VOCs	
	VOCs				
A.3.2.1		VOCs			
A.3.2.2		VOCs			

A.3.2.3 VOCs

A.3.2.4 VOCs

A.3.3

A.3.4 VOCs

A.3.5

A.3.6

A.4 VOCs

A.4.1 VOCs

VOCs

A.4.2 VOCs VOCs

VOCs

A.4.3 pH

A.4.4

A.4.5

A.4.6 /

A.4.7

A.4.8

A.4.9

A.4.10

A.4.11

B

B.1

B1

$$Q = Q_a + \frac{Q_{a+1} - Q_a}{h_{a+1} - h_a} (h - h_a) \quad (B1)$$

Q
 Q_a
 Q_{a+1}
 H
 h_a
 h_{a+1}

h_a
 h_{a+1}
 m
 m
 m

kg/h
 kg/h
 kg/h

B.2

B2

$$Q = Q_b \left(\frac{h}{h_b} \right)^2 \quad (B2)$$

Q
 Q_b
 h
 h_b

m
 m

kg/h
 kg/h

B.3

B3

$$Q = Q_c \left(\frac{h}{h_c} \right)^2 \quad (B3)$$

Q
 Q_c
 h
 h_c

m
 m

kg/h
 kg/h

C

C.1 1 2 VOCs

C.2

C.2.1 C1
 $Q=Q_1+Q_2$ (C1)

Q kg/h
 Q_1, Q_2 kg/h

C.2.2 C2

$$h = \sqrt{\frac{1}{2} h_1^2 + h_2^2} \quad (C2)$$

h m
 h_1, h_2 m

C.2.3 1 2 1

C3
 $x=a \quad Q-Q_1 \quad /Q= a \quad Q_2/Q$ (C3)

x m
 m

Q Q_1 Q_2 C.2.1

D

VOCs

D.1

VOCs

VOCs

D.2

D.2.1

EPA method to

					DB12/ 524-2014
				VOCs	80%
		VOCs		D.2	
D.2			VOCs		

D.3.2.2
D.3.2.3

D.3.2.4
D.3.2.5

D.3.2.6

D.3.3

1
2
3
4

D.3.4

VOCs D.1

$$= \sum_{i=1}^n i \qquad \qquad \qquad \text{D.1}$$

(VOCs) VOCs $\frac{\text{mg}}{\text{m}^3}$
 i i VOCs mg/m^3

D.3.5
D.3.5.1
D.3.5.2

GB/T 16157 D.4.5

D.4 VOCs

D.4.1

PID ECD GC/MS FID

10^{-6}

D.4.2

D.4.2.1

D.4.2.2

D.4.2.3

D.4.2.4 10^{-6}

D.4.3

D.4.3.1

D.4.3.2 0.1~1L/min GB/T 16157 9.3

D.4.3.3

D4.3.4

D.4.3.5 GB/T 16157 9.3.5

D.4.3.6

D.4.3.7 SUMMA Canister

D.4.3.8 266Pa

D.4.3.9

D.4.3.10

D.4.4

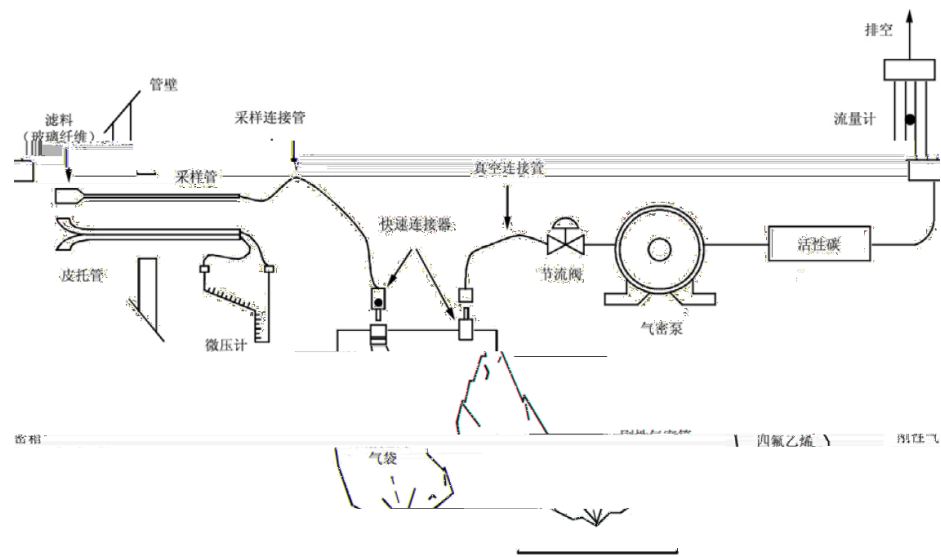
D.4.4.1

12h

D.4.4.2

D.4.4.2.1

D.1



D.1

D.4.4.2.2

D.4.4.2.2.1

D.4.4.2.2.2

D.4.4.2.2.3

2% 1%

30s
5%

5%
5%

D.4.4.2.2.4

5% GC/MS

D.4.4.2.3

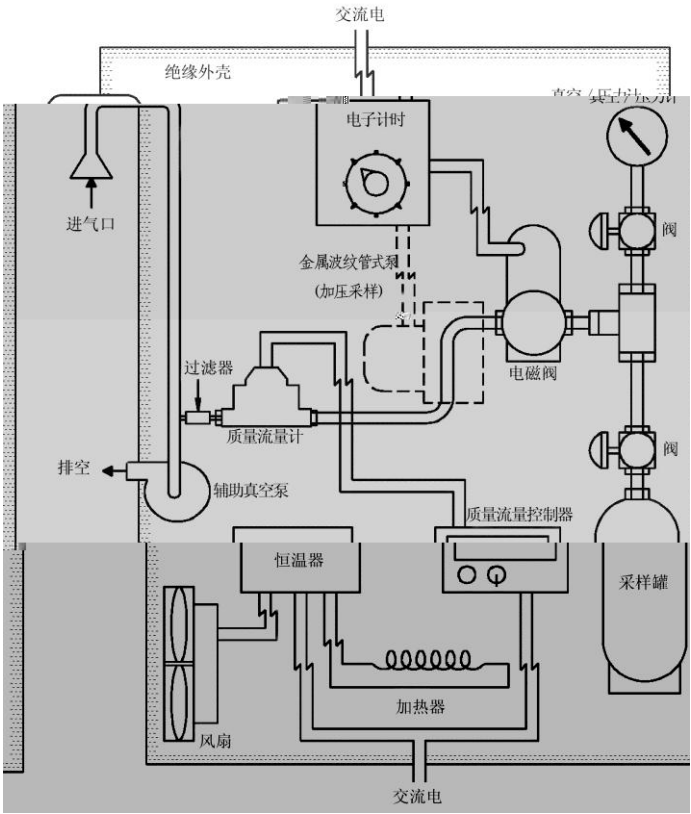
D.2

$$c = \frac{P_0 T_1}{P_1 T_0 (1 - X_{sw})}$$

D.2

c mg/m³

			mg/m^3
s			
P_0	101.325kPa		
T_i	K		
P_i		kPa	
T_0	273.15K		
X_{sw}			
D.4.4.3			
D.4.4.3.1			
			50 ~80
	266Pa		
D.4.4.3.2			
D.4.4.3.2.1			
1	D.2		
		VOCs	
	10s~30s		12h~24h
2	D.2		
VOCs		103~206kPa 15~30psig	



D.2

D.4.4.3.2.2

/

/

D.4.4.3.3

D.4.4.3.3.1

83kPa

12psig

137kPa 20psig

D.3

$$D_f = \frac{Y_a}{X_a}$$

D.3

D_f

X_a

kPa

Y_a

kPa

VOCs

D.4.4.3.3.2

1

2

D.4.4.3.4

$$c_c = c_s \cdot D_f$$

D.4

c_c

D.4.4.4.3

D.5

$$c = \frac{m}{V_{nd}}$$

D.5

c

mg/m³

g

V_{nd}

L

D.4.5

D.4.5.1

20%

10

2

2L

D.4.5.2

D.4.5.3

10%

D.4.5.4

D.4.5.4.1

10%

D.4.5.4.2

5%

20%

20%

D.4.6

10%

10%

D.4.7

D.4.7.1

D.4.7.2

D.4.7.3

2

~3

10%

D.4.7.4

D.4.7.5

D.4.7.6

				E	
			VOCs		
E.1					(GB/T 4754-2011)
	265	251	282	261	
E.2					C27
E.3					
				C264	
E.4					
			C291		
E.5					
	C21				

E.10	C30			
	C32			
E.11	C34	C35	C36	C373
	C374		C39	C41
E.12				
