

HJ 1066 2019

Technical specification for application and issuance of pollutant permit

Printing industry

2019-12-10

2019-12-10

	.....	ii
1	.....	1
2	.....	1
3	.....	2
4	.....	3
5	.....	15
6	.....	16
7	.....	19
8	.....	22
9	.....	26
10	.....	26
A	.....	29
B	.....	31
C	.....	38
D	.....	41
E	.....	44
F	.....	58
G	.....	62

2016 81

48

A~ G

2019 12 10

2019 12 10

1

GB 13271

HJ 953

HJ 942

2

GB 8978

GB 13271

GB 16297

GB 37822

GB/T 4754 2017

GB/T 16157

GB/T 16158

HJ 75

SO₂ NO_x

HJ 493

HJ 494

HJ 495

HJ 608

HJ 732

HJ 819

HJ 942

HJ 944

HJ 953

HJ/T 55

HJ/T 91
HJ/T 373
HJ/T 397
AQ/T 4274

2018 22

48

1996 470

2008 6

2013 14

VOCs

2013 31

2016 1087

3

3.1

printing

/

3.2

printing industry

3.3

printing industry pollutant emission unit

3.4

printing ink

3.5

relief printing

3.6

planographic printing

3.7

recess printing

3.8

permeographic printing

3.9

flexographic printing

3.10

permitted emission limits

3.11

special periods

3.12

volatile organic compounds VOCs

					t/a
	t/a		t/a		t/a
t/a		t/a			
				GB/T 4754 2017	
C23	C231	2311		2312	2319

4. 3

4. 3. 1

4. 3. 2

1

2

				kW
				kW
				kW
				kW
				kW
				kW
				kW
				kW
				kW
				kW
				kW
				kW
				/h
				/h
				kW
				/h
				m/min
				m/min
				m/min
				m/min
				m/min
				m/min
				m/min
				m/min
				m/min
				m/min
				m/min
				kW
				/h
				m/min
				m/min
				m/min
				m/min
				m/min
				mm
				m/min
				m/min
				m/min

				kW
				kW
				kW
				kW
				kW

				kW
				kW
				kW
				kW
				kW
				kW
				/h
				/h
				kW
				/h
				m/min
				m/min
				m/min
				m/min
				m/min
				m/min
				m/min
				m/min
				m/min
				m/min
				m/min
				m/min
				m/min
				kW
				/h
				/h
				m/min
				m/min
				m/min

$$t/a \quad m^2/a \quad /a$$

4. 3. 6

$$h/a$$

4. 3. 7

4. 4

4. 4. 1

4.4.2~4.4.4

4.4.5

4. 4. 2

4. 4. 3

$$m^3/a \quad t/a$$

4. 4. 4

4. 4. 5

4. 5

4. 5. 1

4. 5. 2

4. 5. 2. 1

3

4

GB 16297

3

			a b		+		
			a b		+		
			a b		+		
			a b		+		
			a b				
			a b		+		
			a b		+		
			a b		+		
			a b		+		
			a b		+		
			a b		+		
a							
b							
c							

4

			a b		+		
			a b		+		
			a b		+		
			a b		+		
			a b		+		
			a b		+		
			a b		+		
			a b		+		
			a b		+		
			a b		+		
			a b		+		
a							
b							
c							

4. 5. 2. 2

HJ 608

HJ 608

4. 5. 2. 3

4. 5. 2. 4

4. 5. 3

4. 5. 3. 1

GB 8978

5

5

	pH		V +	6	a	
					b	
					c	/
	pH				a	
		/	/	/	b	
a b c						

4. 5. 3. 2

4. 5. 3. 3

HJ 608

HJ 608

4. 5. 3. 4

4. 5. 3. 5

4. 6

6

4. 7

5

5.1

5.1.1

3

~~14~~
3

5. 2. 2. 2

GB 8978

pH

pH

6

6. 1

6. 2

6. 2. 1

VOCs

VOCs

VOCs

VOCs

6. 2. 2

A A.1

6. 3

A A.2

6. 4

6. 4. 1

6. 4. 2

6. 4. 2. 1

a

VOCs

b

1

2

15

3

4

5

/

pH

6

7

6. 4. 2. 2

a

VOCs

VOCs

GB 37822 VOCs

b

VOCs

VOCs

VOCs

		GB/T 16758	
GB/T 16758 AQ/T 4274			VOCs
	0.3 m/s		
c			
6. 4. 3			
a			
b			
c			
d		pH	
6. 4. 4			
a			
b			
c			
a			
b			
c			
6. 4. 5			
a			
b			
c			
d			
e			
f			

g

7

7.1

HJ 819

7.2

7.3

7.3.1

6~ 8

7.3.2

7.3.3

7.3.3.1

GB/T 16157 HJ 75

HJ 75 HJ/T 397

6

6					

8

		1 /	
	pH	1 /	1 /
		1 /	/
HJ 819			

7.3.5

7.4

2008 6

7.5

7.5.1

HJ 75

7.5.2

GB/T 16157 HJ/T 397 HJ 732

HJ/T 55

HJ/T 91 HJ 493 HJ 494 HJ 495

7.5.3

7.6

HJ 819

7.7

HJ 819 HJ/T 373

7.8

HJ 819

8

8.1

8.1.1

8.1.2

B

C

8.1.2.1

8.1.2.2

a

b

c
8. 1. 2. 3

a

1

2

3

4

5

b

8. 1. 2. 4

8. 1. 2. 5

HJ/T 373

HJ 819

8. 1. 3

8. 1. 3. 1

1 /

8. 1. 3. 2

a

1

b

1

1

1

c

1

8. 1. 3. 3

a

1

1

2

1

1

DCS

7

3

1

1

b

1 /

8. 1. 3. 4

8. 1. 3. 5

1

1

8. 1. 4

8. 1. 4. 1

8. 1. 4. 2

8. 1. 5

C

C.1

8. 2

8. 2. 1

g

h

i

j

k

8.2.4.2

8.2.5

HJ 944

5.3.3

9

G

10

10.1

10.2

10.2.1

5.2.2.1

a

GB/T 16157

HJ/T 397 HJ/T 55

b

1

1

45

2

GB/T 16157 HJ/T 397

1

1

3-4

10.2.2

6.4.2.2

10.3

pH

a

HJ/T 91

b

1

pH

2

HJ 494 HJ 495

10.4

A

	A	A.1	A.2	2
A.1				
A.2				

A.1

		>1000 mg/m ³	+
	()	<1000 mg/m ³	+

A.2

	pH	1 2 3 V
	pH	+

B

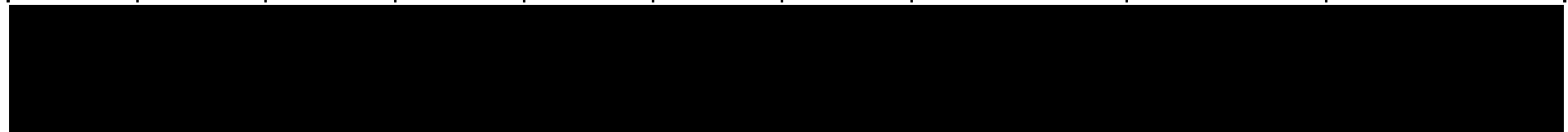
B.1

B.2

a							
a	/						

B.3 VOCs

a			b	c		g/L			
							g/L	d g/L	e g/L



B.5

			a							m³/h	m³/h	b	mg/m³	kg/d	%				m	%
a / pH																		
b / / /																		

B.6

a				
a / / /				

B.7

			a	
a VOCs 0.3 / 3 1 2 4 VOCs				

B.8

															kWh			
									m ³ /d		%							t

B.9

.

B.10

B.11

/

--	--	--	--	--	--

B.12

	/			mg/m ³	

B.13

				mg/L	mg/L		mg/L	mg/L		

C

C

VOCs	a			VOCs g/L		b				

					VOCs 0.3 /					
						mg/m³				
		/				mg/m³				

					mg/L	mg/L	
a	/	/	/	/	/	/	/
b	/	/	/				

D

D

1				

2					

E

E.1

1		1				
2		1				
3						
					%	
					%	
					%	
					MJ	
					kWh	
4		1				
5		1			h	
					h	
					h	
6		1				
7						
8					%	
9					/	
10						
1 2 3 4 5 9 6 7						

E.2

1						h			
						t			
						t			
						t			
						kWh			
				XX		kg			
				XX		%			
2						t			
						m ³			
						h			
						t			
						%			
						t			
						h			
						t			
						%			
						t			
		1							
		2							
3									
4 / / /									

E.3

					mg/m ³		
1							
2							

E.4

				mg/m³	mg/m³							%	

1
2
3

E.5

	/	/			mg/m ³	mg/m ³		
1								

E.6

				mg/L	mg/L				%	
1										
2										
3										
4										

E.7

				mg/m ³	mg/m ³				%	
1										
2										
3										
4										

E.8

	/				mg/m ³	mg/m ³		

E.9

					mg/m³	mg/m³							%	
1														
2														
3														
4														

E.10

E.11

				t	t		
1							
2							

E.12

				t	t		

E.13

				t	t		

				t	t		
1							
2							

E.14

				t	t		

E.15

		/		kg	kg		
		/		t	t		

E.16

				mg/m ³		

E.17

			mg/m ³		
--	--	--	-------------------	--	--

F

F.1

		1		
		1		
				%
				%
				%
				MJ
				kWh
		1		
		1		h
				h
				h
		1		

								%
								/
		1						
		1						
					mg/m ³			

					mg/m³	mg/m³			%
	/	/			mg/m³	mg/m³			
					mg/L	mg/L			%
					mg/m³	mg/m³			%
		/			mg/m³	mg/m³			

						mg/m ³	mg/m ³			%
							mg/m ³			
							mg/m ³			
1 2 3 4 5 6 7 8 9										

G

G. 1

VOCs

VOCs

G.1 ~ G.3
VOCs

G. 2. 1

G. 2. 1. 1

G.4

G.5

$$E_z = \sum_{i=1}^m E_i \quad \text{G.4}$$

$$E_i^T C_{i,j} Q_{i,j} 10^9 \quad \text{G.5}$$

E_z				t
m				
$C_{i,j}$	i		j	mg/m ³
$Q_{i,j}$	i		j	m ³ /h
E_i		i		t
T			h	

G. 2. 1. 2

G.4

G.6

$$E_i = \sum_{j=1}^m (C_j - Q_j - T_j \cdot 10^{-9}) \quad \text{G.6}$$

$$\begin{array}{ccccc} E_i & & i & & t \\ m & & & & \\ C_j & i & & j & \\ \text{mg/m}^3 & & & & \end{array}$$

$$\begin{array}{llll} Q_j & i & j & \text{m}^3/\text{h} \\ T_j & i & j & \text{h} \end{array}$$

G.7

$$C_j = \frac{\sum_{k=1}^n C_k Q_k}{\sum_{k=1}^n Q_k}, Q_j = \frac{\sum_{k=1}^n Q_k}{n}$$

G.7

$$\begin{array}{lll} C_k & k & \text{mg}/\text{m}^3 \\ Q_k & k & \text{m}^3/\text{h} \\ n & & \end{array}$$

G. 2. 2

G. 2. 2. 1

G.8 G.9

$$E = c \cdot q \cdot h \cdot 10^{-6}$$

G.8

$$c = \frac{\sum_{i=1}^n c_i q_i}{\sum_{i=1}^n q_i}, q = \frac{\sum_{i=1}^n q_i}{n}$$

G.9

$$\begin{array}{llll} E & & & \text{t} \\ c & & & \text{mg}/\text{L} \\ q & & & \text{m}^3/\text{d} \\ c_i & i & & \text{mg}/\text{L} \\ q_i & i & & \text{m}^3/\text{d} \\ n & & & \\ h & & & \text{d} \end{array}$$

G. 2. 2. 2

G.10

E P

G.10

E
P

t

t

t /t