THE SOCIALIST REPUBLIC OF VIETNAM

QCVN 20: 2009/BTNMT

National Technical Regulation on industrial emission of organic substances

(This translation is for reference only)

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Foreword

QCVN 20 :2009/BTNMT was prepared by the Committee of National Technical Regulations on atmosphere quality, submitted for approval by the General Department of Environment, Department of Science and Technology, and the Legal Department and promulgated under the Circular No.25/2009/TT-BTNMT dated on November 16th, 2009 of the Minister of Natural Resources and Environment.

National Technical Regulation on Industrial Emission of Organic Substances

1. GENERAL REGULATIONS

1.1 Scope of regulation

This technical regulation specifies maximum allowable concentration of organic substances in industrial emission when emitting into air environment

1.2. Subject of application

This Technical regulation is applicable to organizations and individuals related to the operation of industrial emission which contain organic substances into the air environment

1.3. Explanation of terms

In this Regulation, the following terms can be expressed as follows:

1.3.1. Industrial emissions are a mixture of material compositions which emitting into the air environment from smokestacks, exhaust pipe of the production facilities, processing, trading and industrial services

1.3.2. Standard Emission cubic meters (Nm^3) is a cubic meter of emission at a temperature of 25^0C and a absolute pressure of 760 mm of mercury

2.TECHNICAL REGULATIONS

2.1. Maximum allowable concentration of organic substances in industrial emission which emit into air environment are specified in table 1 as follows:

Table 1: Maximun allowable concentration of Organic substances in industrial emission which emit into air environment

Number	Name	CAS number	Chemical formula	Maximum concentration (mg/Nm^3)
1	Acetylene tetrabromoethylene	79-27-6	$CHBr_2CHBr_2$	14
2	Acetaldehyde	75-07-0	CH_3CHO	270
3	Acrolein	107-02-8	$CH_2=CHCHO$	2.5
4	Amyl acetate	628-63-7	$CH_3COOC_5H_{11}$	525
5	Aniline	62-53-3	$C_6H_5NH_2$	19
6	Benzidine	92-87-5	$NH_2C_6H_4C_6H_4NH_2$	KPHD
7	Benzene	71-43-2	C_6H_6	5
8	Benzyl chloride	100-44-7	$C_6H_5CH_2CI$	5
9	1,3-Butadiene	106-99-0	C_4H_6	2200
10	n-Butyl acetate	123-86-4	$CH_3COOC_4H_9$	950
11	Butylamine	109-73-9	$CH_3(CH_2)_2CH_2NH_2$	15
12	Cresol	1319-77-3	$CH_3C_6H_4OH$	22
13	Chlorobenzene	108-90-7	C_6H_5CI	350
14	Chlorofrom	67-66-3	$CHCI_3$	240
15	ß-chloroprene	126-99-8	$CH_2=CCICH=CH_2$	90
16	Chloropicrin	76-06-2	CCI_3NO_2	0,7
17	Cyclohexane	110-82-7	C_6H_{12}	1300
18	Cyclohexanol	108-93-0	$C_6H_{11}OH$	410
19	Cyclohexanone	108-94-1	$C_6H_{10}O$	400
20	Cyclohexene	110-83-8	C_6H_{10}	1350
21	Dietylamine	109-89-7	$(C_2H_5)_2NH$	75
22	Diflodibrommetan	75-61-6	CF_2Br_2	860
23	o-dichlobenzene	95-50-1	$C_6H_4CI_2$	300
24	1,1-Dichloroethane	75-34-3	$CHCI_2CH_3$	400
25	1,2-Dichloethylene	540-59-0	CICH=CHCI	790
26	1,4-Dioxane	123-91-1	$C_4H_8O_2$	360

Number	Name	CAS number	Chemical formula	Maximum concentration (mg/Nm^3)
27	Dimetylaniline	121-69-7	$C_6H_5N(CH_3)_2$	25
28	Dichloethyl ether	111-44-4	$(ClCH_2CH_2)_2O$	90
29	Dimetylfomamide	68-12-2	$(CH_3)_2NOCH$	60
30	Dimetylsunfate	77-78-1	$(CH_3)_2SO_4$	0.5
31	Dimetylhydrazine	57-14-7	$(CH_3)_2NNH_2$	1
32	Dinitrobenzene	25154-54-5	$C_6H_4(NO_2)_2$	1
33	Etyl acetate	141-78-6	$CH_3COOC_2H_5$	1400
34	Ethylamine	75-04-7	$CH_3CH_2NH_2$	45
35	Ethylbenzene	100-41-4	$CH_3CH_2C_6H_5$	870
36	Ethylbromua	74-96-4	C_2H_5Br	890
37	Ethylendiamine	107-15-3	$NH_2CH_2CH_2NH_2$	30
38	Ethylendibromua	106-93-4	CHBr=CHBr	190
39	Ethyl acrylate	140-88-5	$CH_2=CHCOOC_2H_5$	100
40	Ethylene chlorohydrin	107-07-3	CH_2ClCH_2OH	16
41	Ethylene oxide	75-21-8	CH_2OCH_2	20
42	Ethyl ester	60-29-7	$C_2H_5OC_2H_5$	1200
43	Ethyl chloride	75-00-3	CH_3CH_2CI	2600
44	Ethyl silicate	78-10-4	$(C_2H_5)_4SiO_4$	850
45	Ethanolamine	141-43-5	$NH_2CH_2CH_2OH$	45
46	Furfural	98-01-1	C_4H_3OCHO	20
47	Formaldehyde	50-00-0	HCHO	20
48	Furfuryl (2-Furylmethanol)	98-00-0	$C_4H_3OCH_2OH$	120
49	Flotriclomethane	75-69-4	CCI_3F	5600
50	n-Heptane	142-82-5	C_7H_{16}	2000
51	n-Hexane	110-54-3	C_6H_{14}	450
52	Isopropylamine	75-31-0	$(CH_3)_2CHNH_2$	12
53	n-butanol	71-36-3	$CH_3(CH_2)_3OH$	360
54	Methyl mercaptan	74-93-1	CH_3SH	15
55	Methylacetate	79-20-9	CH_3COOCH_3	610
56	Methyl acrylate	96-33-3	$CH_2=CHCOOCH_3$	35

Number	Name	CAS number	Chemical formula	Maximum concentration (mg/Nm^3)
57	Methanol	67-56-1	CH_3OH	260
58	Methylacetylene	74-99-7	$CH_3C{=}CH$	1650
59	Methylbromua	74-83-9	CH_3Br	80
60	Methylcyclohecxan	108-87-2	$CH_3C_6H_{11}$	2000
61	Methylcyclohecxanol	25639-42-3	$CH_3C_6H_{10}OH$	470
62	Metylcyclohecxanon	1331-22-2	$CH_3C_6H_9O$	460
63	Methyl chloride	74-87-3	CH_3CI	210
64	Methylene chloride	75-09-2	CH_2CI_2	1750
65	Methyl chlorofrom	71-55-6	CH_3CCI_3	2700
66	Monomethylaniline	100-61-8	$C_6H_5NHCH_3$	9
67	Methanolamine	3088-27-5	$HOCH_2NH_2$	31
68	Naphthalene	91-20-3	$C_{10}H_8$	150
69	Nitrobenzene	98-95-3	$C_6H_5NO_2$	5
70	Nitroetan	79-24-3	$CH_3CH_2NO_2$	310
71	Nitroglycerin	55-63-0	$C_3H_5(ONO_2)_3$	5
72	Nitromethane	75-52-5	CH_3NO_2	250
73	2-Nitropropane	79-46-9	$CH_3CH(NO_2)CH_3$	1800
74	Nitrotoluene	1321-12-6	$NO_2C_6H_4CH_3$	30
75	2-Pentanone	107-87-9	$CH_3CO(CH_2)_2CH_3$	700
76	Phenol	108-95-2	C_6H_5OH	19
77	Phenylhydrazine	100-63-0	$C_6H_5NHNH_2$	22
78	n-Propanol	71-23-8	$CH_3CH_2CH_2OH$	980
79	n-Propylacetate	109-60-4	CH_3-COO-C_3H_7	840
80	Propylenedichloride	78-87-5	CH_3-CHCI-CH_2CI	350
81	Propylenoxide	75-56-9	C_3H_6O	240
82	Pyridine	110-86-1	C_5H_5N	30
83	Pyrene	129-00-o	$C_{16}H_{10}$	15
84	p-Quinone	106-51-4	$C_6H_4O_2$	0,4
85	Styrene	100-42-5	$C_6H_5CH{=}CH_2$	100
86	Tetrahydrofuran	109-99-9	C_4H_8O	590
87	1,1,2,2-Tetracloetan	79-34-5	$CI_2HCCHCI_2$	35

Number	Name	CAS number	Chemical formula	Maximum concentration (mg/Nm^3)
88	Tetracloetylen	127-18-4	$CCI_2=CCI_2$	670
89	Tetraclometan	56-23-5	CCI_4	65
90	Tetranitrometan	509-14-8	$C(NO_2)_4$	8
91	Toluen	108-88-3	$C_6H_5CH_3$	750
92	0-Toluidin	95-53-4	$CH_3C_6H_4NH_2$	22
93	Toluene-2,4-diisocyanate	584-84-9	$CH_3C_6H_3(NCO)_2$	0.7
94	Triethylamine	121-44-8	$(C_2H_5)_3N$	100
95	1,1,2-Trichloroethane	79-00-5	$CHCI_2CH_2CI$	1080
96	Trichlorethylene	79-01-6	$CICH=CCI_2$	110
97	Xylene	1330-20-7	$C_6H_4(CH_3)_2$	870
98	Xylidine	1300-73-8	$(CH_3)_2C_6H_3NH_2$	50
99	Vinylchloride	75-01-4	$CH_2=CHCI$	20
100	Vinyltoluene	25013-15-4	$CH_2=CHC_6H_4CH_3$	480

Note: - CAS number: Chemical Abstracts Service Registry Number

- KPHD is not detected

3. DETERMINATION METHOD

3.1. Determation methods of the concentrations of organic substances in industrial emission comply with current national standards:

3.2. When there is no national standard for determining the concentrations of the organic substances in industrial emission specified in this regulation, applying to international standards with accuracy equal to or higher.

4. ORGANIZATION OF IMPLEMENTATION

4.1. This regulation is replaced the application of Vietnam National Standard TCVN 5940 :2005: Air quality – Industrial emission standards - Organic substances, which is issued enclosed with Decision No. 22/2006 /QD-BTNMT dated December 18th, 2006 of the Minister of Natural Resources and Environment on the obligatory application of Vietnam standards on environment

4.2. State management agency on environment shall take responsibility to guide, inspect and supervise the implementation of this regulation.