

## 附件 4

# Emission Standard of Air Pollutants from Manufacture of Paint, ink and allied products

### Abstract

#### 1. Background

The emission standard of air pollutants from Paint, ink and applied products industry (DB31/881-2015) was issued by Shanghai Government in 2015. The regulation pushed the VOCs Treatment of manufacturers of paint, ink and adhesives in Shanghai.

According the current environment policy and environmental management requirement, the regulation need to be revised for the air pollution control. The purpose of the revised regulation is to improve the effectiveness of air pollution control measure and promote the sustainable development of paint,ink and allied products.

Now, the regulation document was drafted and listening to the comments from public, company, association and professional experts .

#### 2. Scope of Application

This document specifies the requirements for the control, monitoring, and supervision of air pollutant emissions from the paint, ink, and adhesive industry.

This document is applicable to the management of air pollutant emissions for existing enterprises or production facilities of the paint, ink, and adhesive industry. It is also applied to the environmental impact assessment, environmental protection facility design, completion environmental protection acceptance, issuance of pollutant discharge permits, and post-production air pollutant emission management of construction projects in the paint, ink, and adhesive industry.

This standard is applicable to enterprises or production facilities that produce dyes and pigments through non-chemical conversion processes. For the production and modification of synthetic resins within enterprises engaged in the manufacture of paint, ink, and adhesive products, GB 31572 "Emission Standards for the Synthetic Resin Industry" shall apply.

#### 3. Scope of Application

3.1 The emission limit from stacks is required to complied with the concentration and emission rate as shown in Table 1 and Table2 and Table 3. In order to control fugitive emission of VOCs (volatile organic compounds ), the limit monitored within factory is upgraded based on the emission standards from China Ministry of Ecology and Environment as shown in Table 4.

3.2 Some requirement for operation , management and monitoring are also proposed and optimized. The basic requirements are same as the previous version in 2015. Some details are added in this version like how to evaluate the compliance of operation and treatment. Please read

the document as attached in the public comment documents.

**Table 1 Maximum Allowable Emission Limits for Basic Air Pollutants**

Serial Number	Pollutant Item		Maximum Allowable Emission Concentration mg/m <sup>3</sup>	Maximum Allowable Emission Rate <sup>b</sup> kg/h	Pollutant Emission Monitoring Location
1	Particulate Matter	Dyestuff Dust, Pigment Dust,	10	0.30	Exhaust pipes from workshops or production facilities
		Carbon Black Dust, Titanium Dioxide Dust	20	0.45	
2	NMHC		60	2.0	
3	TVOC <sup>a</sup>		80	3.0	
4	Benzene Compounds		40	1.5	
5	Characteristic Pollutants		Refer to Table 2	—	

<sup>a</sup>According to the definitions in 3.7 and 3.8, and in conjunction with the raw materials used by the enterprise, the production process, the products and by-products produced, and the requirements of Appendix A and relevant environmental management requirements, organic substances included in TVOC are selected. In addition to the substances determined by the published monitoring methods listed, other substances that meet the definition of volatile organic compounds will be included for analysis once national standards for pollutant monitoring and analysis methods are issued.

<sup>b</sup> If the removal efficiency of VOCs treatment facilities is  $\geq 90\%$ , it is considered to meet the maximum allowable emission rate.

**Table 2 Maximum Allowable Emission Limits for Characteristic Items of Air Pollutants**

Serial Number	Pollutant Item	Manufacture of Paints, Manufacture of Ink and Allied Products, Manufacture of Fillings and Allied Products for Sealing <sup>b</sup>		Manufacture of Adhesive, Manufacture of Animal Glue		Pollution Source Monitoring Location
		Maximum Allowable Emission Concentration, mg/m <sup>3</sup>	Maximum Allowable Emission Rate <sup>c</sup> , kg/h	Maximum Allowable Emission Concentration, mg/m <sup>3</sup>	Maximum Allowable Emission Rate <sup>c</sup> , kg/h	
1	Hydrogen Chloride	10	0.10	10	0.10	Exhaust pipes from workshops or production facilities
2	Benzene	1	0.05	1	0.05	
3	Toluene	10	0.2	10	0.2	
4	Xylene	20	0.8	20	0.8	
5	Styrene	15	1.0 <sup>c</sup>	15	1.0 <sup>c</sup>	
6	Phenol	20	0.10	20	0.10	
7	Aniline Series	20	0.30	20	0.30	
8	Formaldehyde	—	--	5	0.10	

9	Ethyl Acetate	40	0.8	40	0.8
10	Butyl Acetate	40	0.8	40	0.8
11	1,2-Dichloroethane	—	/	5	0.10
12	volatile halogenated hydrocarbons	—	--	20	0.45
13	Cyclohexanone	50	0.52	--	0.52
14	Acrylic Esters <sup>g</sup>	50	1.2	--	1.2
15	Isocyanates	0.1 <sup>d, f</sup>	0.025	0.1 <sup>e, f</sup>	0.025

<sup>a</sup> Combining the raw materials used by the enterprise, the production process, the products produced, by-products, and Appendix A and relevant environmental management requirements, select the characteristic pollutants to be implemented.

<sup>b</sup> Refer to the production of dyes and pigments by non-chemical conversion processes.

<sup>c</sup> If the pollutant control facility has a removal efficiency  $\geq 95\%$ , it is equivalent to meeting the emission rate standard.

<sup>d</sup> Applicable to the production of polyurethane coatings and inks.

<sup>e</sup> Applicable to polyurethane adhesives.

<sup>f</sup> Temporary analysis shall be conducted in accordance with GBZ/T 160.67. Implementation shall follow national analysis method standards once they are issued for pollutant monitoring.

<sup>g</sup> Implementation shall follow national pollutant monitoring method standards once they are issued.

**Table3 Atmospheric Emission Limits for Combustion (Incineration, Oxidation) Units**

Serial Number	Pollutant Item	Emission Limit	Pollution Emission Monitoring Location
1	SO <sub>2</sub>	100 mg/m <sup>3</sup>	Exhaust stack of VOCs combustion (incineration, oxidation) unit
2	NO <sub>x</sub>	200 mg/m <sup>3</sup>	
3	Dioxins and Furans <sup>a</sup>	0.1 ng-TEQ/m <sup>3</sup>	

<sup>a</sup>When incinerating chlorinated organic waste gases, this indicator should be monitored.

**Table 4 Fugitive Emission Monitoring Limits for VOCs Inside the Factory Area**

Pollutant Item	Monitoring Point Limit, mg/m <sup>3</sup>	Limit Meaning	Fugitive Emission Monitoring Location
NMHC	6	1 hour average concentration value at the monitoring point	Monitoring points located outside the factory building
	20	Monitoring points located outside the factory building	