



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 37824-2019

**Emission standard of air pollutants for paint, ink and adhesive
industry**

Issued on: May 24, 2019

Implemented on: July 1, 2019

Issued by: MEE; SAMR

Table of Contents

Foreword	3
1 Scope	5
2 Normative references	5
3 Terms and definitions	7
4 Organized emission control requirements	11
5 Requirements for control of unorganized emissions	15

1 Scope

This standard specifies the emission control requirements, monitoring and supervision management requirements for atmospheric pollutants in the paints, inks and adhesives industries.

This standard applies to the management of air pollutant emissions from existing paints, inks and adhesives industrial enterprises or production facilities, as well as environmental impact assessment, environmental protection facility design, completion environmental protection acceptance, issuance of pollutant discharge permits and air pollutant emission management after commissioning of paints, inks and adhesives industrial construction projects.

The production equipment for synthetic resin production and modification in paints, inks and adhesives industrial enterprises shall comply with the relevant provisions of

GB 31572.

2 Normative references

This standard refers to the following documents or clauses therein. For all dated references, only the dated version applies to this standard. For all undated references, the latest version (including all amendments) applies to this standard.

GB 31572 Emission standard of pollutants for synthetic resin industry

GB 37822 Standard for fugitive emission of volatile organic compounds

GB/T 4754-2017 Industrial classification for national economic activities

GB/T 8017 Standard test method for vapor pressure of petroleum products - Reid Method

GB/T 15516 Air quality - Determination of formaldehyde - Acetylacetone spectrophotometric method

GB/T 16157 The determination of particulates and sampling methods of gaseous pollutants emitted from exhaust gas of stationary source HJ 38 Stationary source emission - Determination of total hydrocarbons, methane from the exhaust stack, they shall be monitored before mixing and the corresponding emission control requirements shall be implemented. If the optional monitoring location can only monitor the mixed exhaust gas, it shall be implemented according to the most stringent provisions of each emission control requirement.

5 Requirements for control of unorganized emissions

5.1 Scope and time of implementation

5.1.1 From July 1, 2019 for new facilities and from July 1, 2020 for existing facilities, unorganized emission control shall be implemented in accordance with the provisions of this standard.

5.1.2 Enterprises in key regions shall implement special control requirements for unorganized emissions; the geographical scope and time of implementation shall be determined by the ecological environment department of the State Council or the provincial people's government.

5.2 Requirements for control of unorganized emissions from VOCs material storage

5.2.1 Except for volatile organic liquid storage tanks, the control requirements for unorganized emissions from VOCs material storage in paints, inks and adhesives enterprises shall comply with the provisions of GB 37822.

5.2.2 Control requirements for volatile organic liquid storage tanks

5.2.2.1 Storage tanks for volatile organic liquids with a true vapor pressure of ≥ 76.6 kPa shall use low-pressure tanks, pressure tanks or other equivalent measures.

5.2.2.2 Storage tanks for volatile organic liquids with a true vapor pressure of ≥ 10.3 kPa but < 76.6 kPa and a storage tank volume of ≥ 30 m³ shall comply with one of the following provisions.

a) Use floating roof tanks. For internal floating roof tanks, high-efficiency sealing methods such as immersion seals and mechanical shoe seals shall be used between the floating roof and the tank wall; for external floating roof tanks, double seals shall be used between the floating roof and the tank wall, meanwhile the primary seal shall use high-efficiency sealing methods such as immersion seals and mechanical shoe seals.

b) Use fixed roof tanks; the exhaust gas discharged shall be collected and treated and meet the requirements of Table 1 and Table 3, or the treatment efficiency shall be not less than 80%.

c) Use a gas phase balance system.

d) Take other equivalent measures.

5.2.3 Special control requirements for volatile organic liquid storage tanks

5.2.3.1 Storage tanks for volatile organic liquids with a true vapor pressure of ≥ 76.6 kPa shall use low-pressure tanks, pressure tanks or other equivalent measures.

5.2.3.2 Storage tanks for volatile organic liquids with a true vapor pressure of ≥ 10.3 kPa but < 76.6 kPa and a storage tank volume of ≥ 20 m³, as well as the storage tanks for volatile organic liquids with a true vapor pressure of ≥ 0.7 kPa but < 10.3 kPa and a storage tank volume of ≥ 30 m³ shall comply with one of the following provisions.

a) Use floating roof tanks. For internal floating roof tanks, high-efficiency sealing methods such as immersion seals and mechanical shoe seals shall be used between the floating roof and the tank wall; for external floating roof tanks, double seals shall be used between the floating roof and the tank wall, meanwhile the primary seal shall use high-efficiency sealing methods such as immersion seals and mechanical shoe seals.

b) When using a fixed roof tank, the exhaust gas shall be collected and treated and meet the requirements of Table 2 and Table 3, or the treatment efficiency shall be not less than 90%.

c) Use a gas phase balance system.

d) Take other equivalent measures.

5.2.4 Operation and maintenance requirements for volatile organic liquid storage tanks

5.2.4.1 Floating roof tank a) The tank body of the floating roof tank shall be kept intact and shall not have holes or gaps. The edge seal of the floating roof shall not be damaged.

b) The openings (holes) of the tank accessories shall be closed, except for sampling, metering, routine inspection, maintenance and other normal activities.

c) When the tank accessories such as pillars and guide devices pass through the floating roof, sealing measures shall be taken.

d) Except for the emptying operation of the tank, the floating roof shall always float on the surface of the stored material.

e) The automatic vent valve shall be closed and well-sealed when the floating roof is in a floating state; it only opens when the floating roof is in a supported state.

f) The edge breathing valve shall be well sealed when the floating roof is in a floating state; the set pressure shall be checked regularly to see if it meets the set requirements.

g) Except for the automatic vent valve and edge breathing valve, the outer edge plate of the floating roof and all the opening pipes through the floating roof shall be immersed below the liquid surface.

5.2.4.2 Fixed roof tank a) The tank body of the fixed roof tank shall be kept intact and shall not have holes or gaps.

b) The openings (holes) of the storage tank accessories shall be sealed, except for sampling, measurement, routine inspection, maintenance and other normal activities.

c) Regularly check whether the set pressure of the breathing valve meets the set requirements.

5.2.4.3 Maintenance and records If the volatile organic liquid storage tank does not comply with the provisions of Article

5.2.4.1 or Article 5.2.4.2, it shall be recorded and repaired or emptied within 90 days and the storage tank shall be emptied and stopped from use. If the repair or emptying of the storage tank is delayed, the relevant plan shall be reported to the ecological environment authority for determination.

5.3 VOCs material transfer and control requirements for transporting unorganized emission The transfer and transportation of unorganized emission control requirements for VOCs material of coating, ink and adhesive enterprises shall comply with the provisions of GB 37822.

5.4 Control requirements for process VOCs unorganized emission

5.4.1 Process control requirements

5.4.1.1 VOCs material batching, addition, reaction, mixing, grinding, dispersion, coloring, dilution, filtration, drying, filling or packaging processes shall be operated with closed equipment or in a closed space; the exhaust gas shall be discharged to the exhaust gas collection and treatment system. If it is not possible to be closed, local gas collection measures shall be taken; the exhaust gas shall be discharged to the exhaust gas collection and treatment system.

5.4.1.2 When cleaning mobile cylinders and equipment parts, a closed system or operation in a closed space shall be used; the exhaust gas shall be discharged to the VOCs exhaust gas collection and treatment system. If it is not possible to be closed, local gas collection measures shall be taken; the exhaust gas shall be discharged to the VOCs exhaust gas collection and treatment system.

5.4.1.3 The vacuum system shall use a dry vacuum pump; the vacuum exhaust shall be discharged to the VOCs waste gas collection and treatment system. If a liquid ring (water ring) vacuum pump, water (water vapor) jet vacuum pump, etc. are used, the circulation trough (tank) of the working medium shall be sealed; the vacuum exhaust and the exhaust of the circulation trough (tank) shall be discharged to the VOCs waste gas collection and treatment system.

5.4.1.4 When the equipment and its pipelines carrying VOCs materials are started and