

# **Twentieth Ordinance Implementing the Federal Immission Control Act – Ordinance on the Limitation of Volatile Organic Compound Emissions Resulting from the Reloading or Storage of Petrol, Fuel Blends or Naphtha (*Zwanzigste Verordnung zur Durchführung des Bundes-Immissionsschutzgesetzes – Verordnung zur Begrenzung der Emissionen flüchtiger organischer Verbindungen beim Umfüllen oder Lagern von Ottokraftstoffen, Kraftstoffgemischen oder Rohbenzin – 20. BImSchV*)**

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The present Ordinance transposes European Parliament and Council Directive 94/63/EC of 20 December 1994 on the control of volatile organic compound (VOC) emissions resulting from the storage of petrol and its distribution from terminals to service stations (OJ EC L 365 p. 24) in German law.

## **Table of contents**

### Part One

#### General provisions

Section 1 Area of application

Section 2 Definitions

### Part Two

#### Requirements for construction, characteristics and operation

Section 3 Storage in tank farms

Section 4 Loading and unloading storage tanks or mobile containers in tank farms

Section 5 Mobile containers

Section 6 Loading the storage tanks of service stations

### Part Three

#### Measurement and monitoring

Section 7 Measuring openings and measuring stations

Section 8 Facilities not subject to licensing

Section 9 Facilities subject to licensing

### Part Four

#### Joint provisions

Section 10 Other or further requirements

Section 11 Authorisation of exceptions

Section 12 Availability of norms

Section 13 Violations

Part Five

Transitional and final provisions

Section 14 Transitional arrangement

Section 15 Coming into force, cessation of validity

## **Part One General provisions**

### **Section 1 Area of application**

(1) The present Ordinance shall apply to the construction, characteristics and operation of

1. facilities for the storage or reloading of petrol, fuel blends or naphtha in tank farms or at service stations,
2. mobile installations for the transport of petrol, fuel blends or naphtha.

(2) The provisions of Annexes A and B of the European Agreement of 30 September 1957 concerning the International Carriage of Dangerous Goods by Road (ADR) in the version of the promulgation of 7 April 2009 (Federal Law Gazette [BGBl.] 2009 Part II p. 396), which were most recently amended in accordance with the 21st ADR Amendment Ordinance (*21. ADR-Änderungsverordnung*) of 7 October 2010 (Federal Law Gazette 2010 Part II p. 1134), the Regulation concerning the International Carriage of Dangerous Goods by Rail (RID) in the version of the promulgation of 16 May 2008 (Federal Law Gazette 2008 Part II pp. 475 and 899), which was most recently amended in accordance with the 16th RID Amendment Ordinance (*16. RID-Änderungsverordnung*) of 11 November 2010 (Federal Law Gazette 2010 Part II p. 1273), and the Annex to the European Agreement of 26 May 2000 concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) (Federal Law Gazette 2007 Part II pp. 1906 and 1908), which was most recently amended in accordance with the 3rd ADN Amendment Ordinance (*ADN-Änderungsverordnung*) of 17 December 2010 (Federal Law Gazette 2010 Part II p. 1550) that are applicable to the transport of petrol, fuel blends or naphtha in non-stationary installations designated in subsection (1) number 2, in the respectively applicable version, shall remain unaffected.

### **Section 2 Definitions**

The following meanings shall be attributed to the following terms within the meaning of the present Ordinance

1. waste gas purification facility:  
a facility for the recovery of petrol, fuel blends or naphtha from vapours (vapour recovery

installation) or a facility for the energy recovery of vapours, in particular in a gas engine, in each case including any buffer reservoir systems;

2. mobile container:  
a non-stationary installation, in particular a tank or a container, for transporting petrol, fuel blends or naphtha from one tank farm to another or from a tank farm to a service station on road, rail or navigable inland waterways;
3. vessel:  
a vessel in accordance with the definition contained in Part 1 Chapter 1 Article 1.01 number 3 of Annex II to Directive 2006/87/EC of the European Parliament and of the Council of 12 December 2006 laying down technical requirements for inland waterway vessels and repealing Council Directive 82/714/EEC (OJ L 389 of 30 December 2006, p. 1), most recently amended by Directive 2009/46/EC (OJ L 109 of 30 April 2009, p. 14);
4. bioethanol:  
ethanol of 100 percent by volume produced from biomass, or from the biodegradable part of waste, and intended to be used in fuel blends;
5. vapours:  
gaseous compounds evaporating from petrol, fuel blends or naphtha;
6. throughput:  
the largest annual quantity of petrol, fuel blends or naphtha refilled from a tank farm or from a service station into mobile containers during the three preceding years;
7. emissions:  
the air pollution emitted from a facility; concentration levels shall refer to the undiluted volume of waste gas in the standard state (273 Kelvin, 1,013 hectopascal) after the moisture content of water vapour has been deducted;
8. specialised company:  
a company within the meaning of section 3 subsection (2) of the Ordinance of 31 March 2010 on Facilities Handling Substances that are Hazardous to Water (*Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen*) (Federal Law Gazette Part I p. 377) which additionally has appliances and equipment for fire and explosion protection and expert individuals who have the requisite knowledge of fire and explosion protection;
9. gantry:  
a facility in a tank farm at which mobile containers can be loaded with petrol, fuel blends or naphtha; a facility for loading road tankers can be equipped with one or more gantries;
10. facility subject to licensing:  
a facility which requires a licence in accordance with section 4 of the Federal Immission Control

Act;

11. vapour balancing system:  
a facility with which the vapours displaced when loading a storage tank or a mobile container are captured and returned through a vapour-tight connection line to the loading mobile container, the loading storage tank or a buffer reservoir system;
12. fuel blends:  
petroleum derivatives with a share of more than 10 and less than 90 percent by volume of bioethanol, corresponding to UN Number 3475 of the respective Table A in Part 3 Chapter 3.2.1 of Annexes A and B to the ADR, in Part 3 Chapter 3.2 of the RID or in Part 3 Chapter 3.2.1 of the Annex to the ADN;
13. storage tank:  
a stationary tank or stationary container for the storage of petrol, fuel blends or naphtha in a tank farm or at a service station;
14. mass flow of organic substances:  
the mass of organic substances emitted during an hour, stated as total carbon minus methane;  
the mass flow is the emission of the entire facility during an operating hour when a facility is operated as intended under the least favourable operating conditions for air quality control;
15. facility not subject to licensing:  
a facility not requiring a licence in accordance with the Federal Immission Control Act;
16. publicly appointed and sworn expert:  
a publicly appointed and sworn expert in accordance with section 36 of the Industrial Code (*Gewerbeordnung*) of 22 February 1999 (Federal Law Gazette Part I p. 202), most recently amended by Article 8 of the Act of 23 November 2011 (Federal Law Gazette Part I p. 2298);
17. petrol:  
petroleum derivatives with a share of up to 10 percent by volume of bioethanol, corresponding to UN Number 1203 of the respective Table A in Part 3 Chapter 3.2.1 of Annexes A and B to the ADR, in Part 3 Chapter 3.2 of the RID or in Part 3 Chapter 3.2.1 of the Annex to the ADN and which are intended for use as fuel for petrol engines;
18. purification level:  
the ratio of the difference between the mass of organic substances input into a waste gas purification facility and emitted in its waste gas to the input mass of organic substances, stated in percent;
19. naphtha:  
untreated petroleum distillate obtained from the refining of petroleum or natural gas, corresponding to UN Number 1268 in the respective Table A in Part 3 Chapter 3.2.1 of Annexes A and B to the ADR, in Part 3 Chapter 3.2 of the RID or in Part 3 Chapter 3.2.1 of the

Annex to the ADN;

20. tank farm:  
a facility with installations for the storage and reloading of petrol, fuel blends or naphtha in or from rail tankers, in vessels or from vessels or in road tankers, including all storage tanks on the site of the facility;
21. service station:  
a facility for dispensing petrol and fuel blends from storage tanks into fuel tanks of motor vehicles;
22. approved inspection agency:  
inspection agency which, in accordance with section 17 subsection (5) of the Appliances and Product Safety Act (*Produktsicherheitsgesetz*) of 6 January 2004 (Federal Law Gazette Part I p. 2), most recently amended by Article 3 of the Act of 7 July 2005 (Federal Law Gazette Part I p. 1970), or section 37 subsection (5) of the Product Safety Act of 8 November 2011 (Federal Law Gazette Part I p. 2178) in each case in conjunction with section 21 subsection (2) of the Industrial Safety Ordinance (*Betriebssicherheitsverordnung*) of 27 September 2002 (Federal Law Gazette Part I p. 3777), most recently amended by Article 5 of the Act of 8 November 2011 (Federal Law Gazette Part I p. 2178), has been designated as an inspection agency by the competent *Land* authority for the testing of facilities requiring supervision in accordance with section 1 subsection (2), sentence 1, numbers 3 and 4 of the Industrial Safety Ordinance to the Federal Ministry of Labour and Social Affairs, and has been published by the latter in the Joint Ministerial Gazette (*Gemeinsames Ministerialblatt*);
23. intermediate storage of vapours:  
shall mean the intermediate storage of vapours in a fixed roof tank at a terminal for later transfer to and energy recovery at another terminal. This shall also include the intermediate storage of vapours in the vapour space of a fixed-roof tank that is partly filled with petrol, fuel blends or naphtha with the same objective. The transport of vapours between storage tanks within a tank farm shall not be deemed to constitute the intermediate storage of vapours.

## **Part Two**

### **Requirements for construction, characteristics and operation**

#### **Section 3 Storage in tank farms**

(1) The operator shall construct and operate above-ground storage tanks in such a way that the outer wall and the roof are painted in a colour with a total radiant heat reflectance of at least 70 per cent. The operator shall equip and operate fixed-roof tanks with vacuum/pressure relief valves as long as there are no safety-related reasons for not doing so.

(2) The operator shall equip and operate floating-roof tanks in accordance with the state-of-the-art using seals. The seals must be such that, when the tank is static, they retain at least 97 per cent of the

vapours in comparison to a comparable fixed-roof tank with no inner floating deck.

(3) The operator shall equip and operate fixed-roof tanks with an inner floating deck with seals such that, when the tank is static, the seals retain at least 97 per cent of the vapours in comparison to a comparable fixed-roof tank with no inner floating deck.

(4) Storage tanks in tank farms with a throughput of 25,000 tonnes or more may only be constructed and operated

1. as fixed-roof tanks the vapour space of which is connected to a waste gas purification facility complying with the requirements of section 4 subsection (3),
2. as floating-roof tanks, or
3. as fixed-roof tanks with an inner floating deck.

(5) In derogation from subsections (2) and (3), a retention rate of the vapours of less than 97 percent may be approved by the competent authority with tanks which have a diameter of less than 40 meters.

(6) Where no safety-related aspects apply, gasses and vapours which are emitted from pressure relief fittings and discharge devices shall be fed into a vapour collection system or a waste gas purification facility.

(7) Waste gas resulting from inspections or when cleaning the storage tanks shall be fed into post-combustion, or equivalent measures shall be taken to reduce emissions.

## **Section 4 Loading and unloading storage tanks or mobile containers in tank farms**

(1) The operator shall construct and operate facilities for the storage and reloading of petrol, fuel blends or naphtha in such a way that vapours displaced when loading a storage tank or a mobile container are collected and either

1. fed via a vapour-tight connection pipe to a waste gas purification facility in accordance with subsection (3), or
2. fed into the loading facility using a vapour balancing system in accordance with the state-of-the-art, with which, in relation to the use of a waste gas purification facility in accordance with subsection (3) number 1 with facilities not subject to licensing, or in accordance with subsection (3) number 2 (b) with facilities subject to licensing, in each case an at least equally large reduction in emissions is achieved.

(2) Vapour balancing systems shall be deemed to comply with the state-of-the-art if in particular

1. the flow of fuel is only released if the vapour balancing system is connected using a locking

device, and

2. the vapour balancing system and the connected installations do not permanently release vapours into the atmosphere during the vapour displacement, apart from releases which occur for safety reasons.

Sentence 1, number 1 shall not apply to the reloading of petrol, fuel blends or naphtha with rail tankers, tank containers or tanker barges and to reloading to a stationary facility with a capacity of less than 1 cubic metre or with a maximum annual throughput of 100 cubic metres of petrol, fuel blends or naphtha.

(3) The operator shall construct and operate waste gas purification facilities in such a way that,

1. with facilities not subject to licensing,
  - a) the purification level is not less than 97 per cent, and
  - b) the emissions of the organic substances in the waste gas do not exceed a mass concentration of 12 grams per cubic metre as an average hourly value, stated as total carbon not including methane, and,
2. with facilities subject to licensing,
  - a) the emissions of organic substances do not exceed the mass concentration of 50 milligrams per cubic metre, stated as total carbon not including methane, if the total mass flow is more than 0.50 kilograms per hour,
  - b) the emissions of organic substances do not exceed the mass concentration of 1.7 grams per cubic metre, stated as total carbon not including methane, if the total mass flow is 0.50 kilograms per hour or less.

(4) The operator shall construct and operate tank farms with facilities for loading road tankers in such a way that at least one gantry complies with the requirements for bottom loading stipulated in Annex IV of the European Parliament and Council Directive 94/63/EC of 20 December 1994 on the control of volatile organic compound (VOC) emissions resulting from the storage of petrol and its distribution from terminals to service stations (OJ EC L 365 p. 24).

(5) The operator shall construct and operate a facility in such a way that loading at a gantry is immediately interrupted if vapours are emitted.

(6) When loading a mobile container from above, the operator shall ensure that the outlet of the loading arm is kept close to the bottom of the mobile container in order to prevent spraying upwards.

## **Section 5 Mobile containers**

(1) Mobile containers may only be constructed and operated in such a way that

1. the residual vapours are retained in the container after petrol, fuel blends or naphtha have been

unloaded,

2. they take in and retain vapours that have been displaced from the storage tanks of service stations in accordance with section 6 subsection (1) or from tank farms in accordance with section 4 subsection (1) number 2.

Sentence 1, number 2 shall only apply to rail tankers where petrol, fuel blends or naphtha is delivered in them to tank farms in which vapours within the meaning of section 2 number 23 are temporarily stored.

(2) The operator of a mobile container shall ensure that the vapours designated in subsection (1) sentence 1, numbers 1 and 2, apart from releases via the pressure relief valves, are retained in the mobile container until it is reloaded in a tank farm or the vapours are fed into a waste gas purification facility.

## **Section 6 Loading the storage tanks of service stations**

(1) Facilities for the storage and transfer of petrol or fuel blends at service stations may only be constructed and operated in such a way that the vapours that are displaced when loading a storage tank are collected using a vapour balancing system in accordance with the state-of-the-art and fed into the loading mobile container. Section 4 subsection (2) shall apply mutatis mutandis.

(2) Subsection (1) shall not apply to service stations built prior to 4 June 1998 the annual discharge volume of petrol or fuel blends of which does not exceed 100 cubic metres.

## **Part Three Measurement and monitoring**

### **Section 7 Measuring openings and measuring stations**

Where measurements are necessary in order to monitor compliance with requirements in accordance with sections 3 to 6, the operator shall establish suitable measuring openings and measuring stations.

### **Section 8 Facilities not subject to licensing**

(1) The operator of a stationary facility that is not subject to licensing shall notify the competent authority prior to taking up operations.

(2) The operator of a facility that is not subject to licensing which is equipped with a vapour balancing system in accordance with section 4 subsection (1) number 2 or section 6 subsection (1), sentence 1, shall have compliance with the requirements in accordance with section 4 subsection (2) certified by an approved inspection agency or by a publicly appointed and sworn expert:

1. for the first time before taking up operations, and thereafter
2. every two-and-a-half years with fuel blends, and



3. every five years with petrol and naphtha.

The operator shall have any faults that are found on the first inspection before taking up operation of the facility, and on repeat inspections, remedied promptly by a specialised company.

(3) The operator of a facility that is not subject to licensing and that is equipped with a waste gas purification facility shall have compliance with the requirements of section 4 subsection (3) number 1 certified by an agency designated pursuant to section 29b subsection (2) in conjunction with section 26 of the Federal Immission Control Act by measurements in accordance with subsection (4)

1. for the first time at the earliest three months and at the latest six months after taking up operation of the waste gas purification facility, and thereafter

2. repeatedly every three years.

(4) The measurements shall be performed with suitable measuring devices. Reproducibility must be at least 95 percent of the measurement value. At least three individual measurements of the mass concentration of organic substances in the waste gas, both upstream and downstream from the waste gas purification facility, shall be carried out during an at least seven-hour working day with throughput as intended. The average hourly value shall be calculated from the measurement values and notified. The composite error emerging from the measuring devices, the calibration gas and the measurement procedure may not exceed 10 percent of the measurement value. The requirements of section 4 subsection (3) number 1 shall be deemed to have been complied with if the average hourly value is not lower than the prescribed purification level and does not exceed the maximum permissible mass concentration.

(5) The operator shall have a report drawn up on the result of each inspection in accordance with subsection (2) and on measurements in accordance with subsection (3) and subsection (4). The current reports on the result of the inspections in accordance with subsection (2), as well as on the result of the measurements in accordance with subsection (3), shall be kept at the place of operation for five years after being drawn up; with mobile containers, a copy of the report shall additionally be retained at the operator's place of business. The operator shall submit a copy of the report on stationary facilities to the competent authority within four weeks after the inspection or the measurements. With mobile containers, the report or a copy of the report shall be submitted to the competent authority on request.

(6) The operator shall ensure that connecting hoses and pipes are checked for any leaks at regular intervals.

(7) The operator shall ensure, within the regular inspections that are prescribed in accordance with the provisions on the carriage of dangerous goods, that

1. the vacuum/pressure relief valves on mobile containers, and
2. with road tankers vapour-proofing is checked using a pressure test.

## **Section 9 Facilities subject to licensing**

The requirements of number 5.3 of the Technical Instructions on Air Quality Control (*Technische Anleitung zur Reinhaltung der Luft – TA Luft*) of 24 July 2002 (Joint Ministerial Gazette [GMBI] p. 511) in the respectively applicable version shall apply to the measurement and monitoring of the emissions of organic substances. The requirements in accordance with section 8 subsections (4) and (5) shall apply here as a minimum. Section 8 subsections (2) and (6) shall apply *mutatis mutandis*.

## **Part Four Joint provisions**

### **Section 10 Other or further requirements**

The power of the competent authority to make other or further requirements on the basis of the Federal Immission Control Act shall remain unaffected unless this is opposed by the provisions of Directive 94/63/EC and the provisions on the carriage of dangerous goods.

### **Section 11 Authorisation of exceptions**

(1) At the request of the operator, the competent authority may authorise exceptions to be made from the requirements contained in the present Ordinance insofar as, taking the special circumstances of the individual case into consideration,

1. individual requirements contained in the Ordinance cannot be complied with or only with a disproportionate effort,
2. no adverse environmental impacts and no hazards to employees and third parties are to be anticipated, and
3. the provisions contained in Directive 94/63/EC are complied with.

In derogation from section 5 subsection (2), tanker barges may ventilate without needing to apply for an exception in an individual case if this is necessitated by an unexpected stay in a dock or an unexpected on-the-spot repair by a dock with the need for degassing, and the residual vapours cannot be fed into a waste gas purification facility after unloading of the petrol, fuel blends or naphtha. The ventilation of tanker barges shall only be permissible if it is carried out while on the move; sub-chapter 7.2.3.7 of the ADN shall be complied with in so doing. Ventilation shall not be permissible

1. near locks, including their exit basin, under bridges or in densely-populated areas,
2. in test areas in accordance with section 44 subsection (2) of the Federal Immission Control Act that have been stipulated by a legal ordinance.

(2) If the facility is part of a site that is entered in the list in accordance with Article 8 of Council Regulation (EEC) No 1836/93 of 29 June 1993 allowing voluntary participation by companies in the industrial sector in a Community eco-management and audit scheme (OJ EC L 168 p. 1) in conjunction with Article 17§4, sentence 1, of Regulation (EC) No 761/2001 of the European Parliament

and of the Council of 19 March 2001 allowing voluntary participation by organisations in a Community eco-management and audit scheme (EMAS) (OJ EC L 114 p. 1) or in the list in accordance with Article 7§2 of Regulation (EC) No 761/2001, at the request of the operator, the competent authority may authorise by way of an exception that repeated measurements in accordance with section 8 subsection (3) number 2, or within the meaning of number 5.3.2.1 of the Technical Instructions on Air Quality Control of 24 July 2002 (Joint Ministerial Gazette p. 511), not be carried out if the operator's environmental management system makes provision for equivalent measurements of its own, as well as for reports.

(3) Exceptions that were granted in accordance with section 8 of the Ordinance on the Limitation of Hydrocarbon Emissions Resulting from the Reloading and Storage of Petrol (*Verordnung zur Begrenzung der Kohlenwasserstoffemissionen beim Umfüllen und Lagern von Ottokraftstoffen*) of 7 October 1992 (Federal Law Gazette Part I p. 1727) shall continue to be deemed to be exceptions within the meaning of subsection (1). The exceptions shall be revoked insofar as they are opposed by provisions contained in Directive 94/63/EC.

## **Section 12 Availability of norms**

DIN norms and DIN-EN norms, as well as VDI guidelines, referred to in the present Ordinance can be obtained from the publishers Beuth Verlag GmbH, based in Berlin, and are deposited with the German National Library for safe keeping as an archive document.

## **Section 13 Violations**

(1) Whoever wilfully or negligently performs, as the operator of a facility subject to licensing, any of the following actions violates this ordinance within the meaning of section 62 subsection (1) number 2 of the Federal Immission Control Act:

1. fails to construct or operate a storage tank, a facility, a waste gas purification facility or a tank farm or fails to do so in the prescribed manner in violation of section 3 subsection (1), sentence 1, or of section 4 subsections (1) and (3) number 2, or subsection (4) or (5),
2. fails to equip or operate a floating-roof tank or a fixed-roof tank in the prescribed manner in violation of section 3 subsection (2), sentence 1, or subsection (3), sentence 1, or
3. constructs or operates a storage tank in violation of section 3 subsection (4).

(2) Whoever wilfully or negligently performs any of the following actions violates this ordinance within the meaning of section 62 subsection (1) number 7 of the Federal Immission Control Act,

1. as the operator of a facility not subject to licensing,
  - a) fails to construct or operate a storage tank, a facility, a waste gas purification facility or a tank farm, or fails to do so in the prescribed manner in violation of section 3 subsection (1), sentence 1, or of section 4 subsections (1) and (3) number 1, or subsection (4) or (5),

- b) fails to equip or operate a floating-roof tank or a fixed-roof tank in the prescribed manner in violation of section 3 subsection (2), sentence 1, or subsection (3), sentence 1,
  - c) constructs or operates a storage tank, a container or a facility in violation of section 3 subsection (4), of section 5 subsection (1), sentence 1, or of section 6 subsection (1), sentence 1,
2. fails to notify, or gives incorrect notification, or does not notify on time in violation of section 8 subsection (1),
3. fails to have compliance with the requirements contained therein certified, or fails to do so on time, or fails to have faults that are found remedied, or fails to do so on time in violation of section 8 subsection (2) or (3),
4. fails to keep a report referred to therein, or fails to do so for at least five years in violation of section 8 subsection (5), sentence 2, or
5. fails to submit a copy, or fails to do so on time, or fails to submit a report, or to do so on time in violation of section 8 subsection (5), sentence 3 or sentence 4.

## **Part Five**

### **Transitional and final provisions**

#### **Section 14 Transitional arrangement**

The requirements of section 3 subsections (2) and (3) shall be complied with as regards facilities in tank farms from 30 June 2015 onwards.

#### **Section 15 (Coming into force, cessation of validity)**