

## Notification of Ministry of Natural Resources and Environment

### Re: Designation of some types of chemical factory as point source which shall be regulated of their emission of benzene and 1, 3-butadiene into the atmosphere

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Whereas it deemed appropriate to designate some types of chemical factory as point source which shall be regulated of their emission of benzene and 1, 3-butadiene into the atmosphere;

By the virtue of Section 68 of the Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (1992), the Minister of Natural Resources and Environment, by the recommendation of the Pollution Control Committee, hereby announced that:

Article 1 In this Notification;

“Chemical factory” means a factory of type 42 or type 44, as prescribed in the factory law, which has or uses volatile organic compounds in its production process in the amount from 36 tons per year, and which produces or uses benzene or 1, 3-butadiene.

“New chemical factory” means a chemical factory which is granted the factory operation license or the existing chemical factory that is granted the factory expansion license since the effective date of this Notification onwards.

“Existing chemical factory” means a chemical factory which is granted the factory operation license or the factory expansion license before the effective date of this Notification.

Article 2 Chemical factory mentioned in Article 1 shall be designated as point source which shall be regulated of their emission of benzene and 1, 3-butadiene into the atmosphere.

Article 3 Owner or possessor of point source prescribed in Article 2 is not permitted to discharge benzene or 1, 3-butadiene into the atmosphere unless the exhaust air complies with the regulated emission standard , by methods other than dilution, of the chemical factory prescribed in the Notification of Ministry of Natural Resources and Environment regarding the emission standard of benzene and 1,3-butadiene emitted from the chemical factory. However, the dilution method is not permitted to apply.

Article 4 This Notification shall enter into force on the following periods:

(1) For new chemical factory, it shall enter into force on the effective date of this Notification.

(2) For existing chemical factory, it shall enter into force after the 18 months, since the effective date of this Notification, elapsed.

Article 5 This Notification shall enter into force on the next day after its publishing date in the Government Gazette onwards.

Announced on 25<sup>th</sup> November B.E. 2557 (2014)

General Dapong Rattanasuwanna

Minister of Natural Resources and Environment

*(Published in the Government Gazette, Volume 131, Part 273Ngor, dated 30th December B.E. 2557(2014))*

Note:

**Factory Type 42** : Factory engages in business related to chemical products, chemicals, or chemical materials, which is not fertilizer, as follows

- (1) Producing chemical products, chemicals or chemical materials
- (2) Storage, transportation, sorting, selecting or packaging toxic chemical products

**Factory Type 44** : Factory engages in business related to production of synthetic resin, elastomer, plastics or synthetic fiber, excluding fiber optic

## Notification of Ministry of Natural Resources and Environment

### Re: Emission standard of benzene and 1, 3-butadiene from chemical factory

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Whereas it deemed appropriate to prescribe the emission standard of benzene and 1, 3-butadiene from chemical factory;

By the virtue of Section 55 of the Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (1992), the Minister of Natural Resources and Environment, by the recommendation of the Pollution Control Committee and the endorsement of the National Environment Board, hereby announced that:

Article 1 In this Notification:

“Volatile organic compounds” means compounds containing organic carbon as their major composition, having vapor pressure greater than 0.1 mmHg at 20 degrees Celsius and at 760 mmHg, excluding methane, carbon monoxide, carbon dioxide, metal carbide, or metal carbonate, ammonium carbonate.

“Chemical factory” means a factory of type 42 or type 44, as prescribed in the factory law, which has or uses volatile organic compounds in its production process in the amount from 36 tons per year, and which produces or uses benzene or 1, 3-butadiene.

“Emission stack” means stack or duct that collects exhaust air from production process that produces or uses benzene or 1, 3-butadiene and discharge it into the atmosphere, excluding stack or duct that collects exhaust air from chemicals storage tank, furnace, boiler, incinerator, thermal oxidizer incinerator, and flare.

Article 2 Emission standards regulating concentration of benzene and 1, 3-butadiene discharged from chemical factory are stipulated as follows:

**(1) Benzene, not higher than 7 mg/m<sup>3</sup>**

**(2) 1, 3-butadiene, not higher than 5 mg/m<sup>3</sup>**

Article 3 Chemical factory shall regulate its emission to be in compliance with the Notification of Ministry of Natural Resources and Environment regarding the industrial emission standards as well.

Article 4 Measurement of benzene and 1, 3-butadiene from stack or duct shall use Method 18: Measurement of Gaseous Organic Compound Emissions by Gas Chromatography, prescribed by the USEPA, or other methods prescribed in the Government Gazette by the Pollution Control Committee.

Article 5 Reference conditions shall be at 1 ATM or 760 mmHg, temperature of 25 degrees Celsius, on dry basis, and having volume of oxygen at actual condition.

Article 6        This Notification shall enter into force on the next day after its publishing date in the Government Gazette onwards.

Announced on 25<sup>th</sup> November B.E. 2557 (2014)

General Dapong Rattanasuwanna

Minister of Natural Resources and Environment

*(Published in the Government Gazette, Volume 131, Part 273Ngor, dated 30th December B.E. 2557(2014))*

## Notification of Ministry of Natural Resources and Environment

### Re: Designation of some types of chemical factory as point source which shall be regulated of the exhaust air to be emitted into the atmosphere

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Whereas it deemed appropriate to designate some types of chemical factory as point source pollution which shall be regulated of the exhaust air to be emitted into the atmosphere;

By the virtue of Section 68 of the Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (1992), which contains some provisions concerning the limitation of the person's rights and freedoms that can be done by the provisions of Section 29 combined with Section 33, Section 38, Section 41, and Section 43 of the Constitution of the Kingdom of Thailand, the Minister of Natural Resources and Environment, by the recommendation of the Pollution Control Committee, hereby announced that:

Article 1            In this Notification;

“Chemical factory” means a factory of type 42 or type 44, as prescribed in the factory law, which produces, uses, or stores 1, 2-dichloroethane or vinyl chloride.

“Existing chemical factory” means a chemical factory which is granted the factory operation license or the factory expansion license before the effective date of this Notification.

“New chemical factory” means a chemical factory which is granted the factory operation license or the existing chemical factory that is granted the factory expansion license since the effective date of this Notification onwards.

Article 2            Chemical factory shall be designated as point source pollution which shall be regulated of the exhaust air to be emitted into the atmosphere.

Article 3            Owner or possessor of point source pollution prescribed in Article 2 is not permitted to discharge exhaust air into the atmosphere unless the exhaust air complies with the regulated emission standard of the chemical factory, by the methods other than dilution, prescribed in the Notification of Ministry of Natural Resources and Environment regarding the emission standard of the chemical factory.

Article 4            This Notification shall enter into force on the following periods:

(1) For new chemical factory, it shall enter into force on the effective date of this Notification.

(2) For existing chemical factory, it shall enter into force after one year, since the effective date of this Notification, elapsed.

Article 5 This Notification shall enter into force on the next day after its publishing date in the Government Gazette onwards.

Announced on 8<sup>th</sup> July B.E. 2553 (2010)

Mr. Suwit Khunkitti

Minister of Natural Resources and Environment

*(Published in the Government Gazette, Volume 127, Part 96Ngor, dated 10th August B.E. 2553(2010))*

Note:

**Factory Type 42** : Factory engages in business related to chemical products, chemicals, or chemical materials, which is not fertilizer, as follows

- (1) Producing chemical products, chemicals or chemical materials
- (2) Storage, transportation, sorting, selecting or packaging toxic chemical products

**Factory Type 44** : Factory engages in business related to production of synthetic resin, elastomer, plastics or synthetic fiber, excluding fiber optic

## Notification of Ministry of Natural Resources and Environment

### Re: Emission standard of chemical factory

Whereas it deemed appropriate to prescribe the emission standard of benzene and 1, 3-butadiene from chemical factory;

By the virtue of Section 55 of the Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (1992), which contains some provisions concerning the limitation of the person's rights and freedoms that can be done by the provisions of Section 29 combined with Section 33, Section 38, Section 41, and Section 43 of the Constitution of the Kingdom of Thailand, the Minister of Natural Resources and Environment, by the recommendation of the Pollution Control Committee and the endorsement of the National Environment Board, hereby announced that:

Article 1 In this Notification:

“Chemical factory” means a factory of type 42 or type 44, as prescribed in the factory law, which produces, uses, or stores 1, 2-dichloroethane or vinyl chloride.

Article 2 Emission standards regulating concentration of exhaust air from the production process of vinyl chloride, including storage of 1, 2-dichloroethane and vinyl chloride in the chemical factory as follows:

**(1) 1, 2-dichloroethane, not higher than 5 mg/m<sup>3</sup>**

**(2) Vinyl chloride, not higher than 5 mg/m<sup>3</sup>**

Article 3 Emission standards regulating total amount of emission in one year from chemical factory are as follows:

Type of Production Process	1, 2-dichloroethane	Vinyl chloride
1. Production process of vinyl chloride, including storage of 1, 2-dichloroethane and vinyl chloride in the production process	Not higher than 20 grams per one ton of 1, 2-dichloroethane used in the production process	Not higher than 100 grams per the production of one ton of vinyl chloride
2. Production process of S-PVC, or production of PVC by suspension process	-	Not higher than 100 grams per the production of one ton of S-PVC

3. Production process of paste-PVC or production of PVC by emulsion process	-	Not higher than 2,000 grams per the production of one ton of paste-PVC
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Article 4 Chemical factory shall regulate its emission to be in compliance with the Notification of Ministry of Natural Resources and Environment regarding the industrial emission standards as well.

Article 5 Sampling method of exhaust air as mentioned in Article 2 shall be taken at the emission stack or duct of the chemical factory using sampling bag and measured by Gas Chromatography method or other methods published in the Government Gazette by the Pollution Control Committee.

Article 6 Calculation method shall be made based on the following criteria and conditions:

(1) Without fuel combustion: at 1 ATM or 760 mmHg, temperature of 25 degree

Celsius, on dry basis, and having volume of oxygen at actual condition.

(2) With fuel combustion: at 1 ATM or 760 mmHg, temperature of 25 degree Celsius, on dry basis, and having volume of excess air at 50% or excess oxygen for combustion at 7%.

Article 7 Sampling, measurement and calculation of exhaust air according to Article 3 shall be complied with the prescription of the Pollution Control Committee which is published in the Government Gazette.

Article 8 This Notification shall enter into force on the next day after its publishing date in the Government Gazette onwards.

Announced on 8<sup>th</sup> July B.E. 2553 (2010)

Mr. Suwit Khunkitti

Minister of Natural Resources and Environment

*(Published in the Government Gazette, Volume 127, Part 96Ngor, dated 10th August B.E. 2553(2010))*