

Commission Implementing Decision (EU) 2017/2117 of 21 November 2017 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the production of large volume organic chemicals (notified under document C(2017) 7469) (Text with EEA relevance)

- Article 1 The best available techniques (BAT) conclusions for the production of...
- Article 2 This Decision is addressed to the Member States.  
Signature

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ANNEX

BEST AVAILABLE TECHNIQUES (BAT) CONCLUSIONS FOR THE PRODUCTION OF LARGE VOLUME ORGANIC CHEMICALS

SCOPE

GENERAL CONSIDERATIONS

- Best Available Techniques
- Averaging periods and reference conditions for emissions to air
- Reference oxygen level
- Conversion to reference oxygen level
- Averaging periods for emissions to water
- Acronyms and definitions

1. GENERAL BAT CONCLUSIONS

- 1.1. Monitoring of emissions to air
  - BAT 1: BAT is to monitor channelled emissions to air from process...
  - BAT 2: BAT is to monitor channelled emissions to air other than...
- 1.2. Emissions to air
  - 1.2.1. Emissions to air from process furnaces/heaters
    - BAT 3: In order to reduce emissions to air of CO and...
    - BAT 4: In order to reduce NOX emissions to air from process...
    - BAT 5: In order to prevent or reduce dust emissions to air...
    - BAT 6: In order to prevent or reduce SO2 emissions to air...
  - 1.2.2. Emissions to air from the use of SCR or SNCR...
    - BAT 7: In order to reduce emissions to air of ammonia which...
  - 1.2.3. Emissions to air from other processes/sources
    - 1.2.3.1. Techniques to reduce emissions from other processes/sources
      - BAT 8: In order to reduce the load of pollutants sent to...
      - BAT 9: In order to reduce the load of pollutants sent to...
      - BAT 10: In order to reduce channelled emissions of organic compounds to...
      - BAT 11: In order to reduce channelled dust emissions to air, BAT...
      - BAT 12: In order to reduce emissions to air of sulphur dioxide...

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- 1.2.3.2. Techniques to reduce emissions from a thermal oxidiser  
 BAT 13: In order to reduce emissions to air of NO<sub>x</sub>, CO, ...
- 1.3. Emissions to water  
 BAT 14: In order to reduce the waste water volume, the pollutant...
- 1.4. Resource efficiency  
 BAT 15: In order to increase resource efficiency when using catalysts, BAT...  
 BAT 16: In order to increase resource efficiency, BAT is to recover...
- 1.5. Residues  
 BAT 17: In order to prevent or, where that is not practicable, ...
- 1.6. Other than normal operating conditions  
 BAT 18: In order to prevent or reduce emissions from equipment malfunctions, ...  
 BAT 19: In order to prevent or reduce emissions to air and ...
2. BAT CONCLUSIONS FOR LOWER OLEFINS PRODUCTION
  - 2.1. Emissions to air
    - 2.1.1. BAT-AELs for emissions to air from a lower olefins cracker...
    - 2.1.2. Techniques to reduce emissions from decoking  
 BAT 20: In order to reduce emissions to air of dust and ...
  - 2.2. Emissions to water  
 BAT 21: In order to prevent or reduce the amount of organic...  
 BAT 22: In order to reduce the organic load discharged to waste...  
 BAT 23: In order to prevent or reduce the amount of sulphides...
3. BAT CONCLUSIONS FOR AROMATICS PRODUCTION
  - 3.1. Emissions to air  
 BAT 24: In order to reduce the organic load from process off-gases...  
 BAT 25: In order to reduce emissions to air of dust and ...
  - 3.2. Emissions to water  
 BAT 26: In order to reduce the amount of organic compounds and...  
 BAT 27: In order to reduce the waste water volume and the...
  - 3.3. Resource efficiency  
 BAT 28: In order to use resources efficiently, BAT is to maximise...
  - 3.4. Energy efficiency  
 BAT 29: In order to use energy efficiently when using distillation, BAT...
  - 3.5. Residues  
 BAT 30: In order to prevent or reduce the amount of spent...
4. BAT CONCLUSIONS FOR ETHYLBENZENE AND STYRENE MONOMER PRODUCTION
  - 4.1. Process selection  
 BAT 31: In order to prevent or reduce emissions to air of...
  - 4.2. Emissions to air  
 BAT 32: In order to reduce the load of HCl sent to...  
 BAT 33: In order to reduce the load of dust and HCl...  
 BAT 34: In order to reduce the organic load sent to the...  
 BAT 35: In order to reduce emissions of organic compounds to air...
  - 4.3. Emissions to water  
 BAT 36: In order to reduce waste water generation from ethylbenzene dehydrogenation...  
 BAT 37: In order to reduce emissions to water of organic peroxides...
  - 4.4. Resource efficiency

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- BAT 38: In order to recover organic compounds from ethylbenzene dehydrogenation prior...
- BAT 39: In order to increase resource efficiency, BAT is to recover...
- BAT 40: In order to increase the resource efficiency of the acetophenone...
- 4.5. Residues
  - BAT 41: In order to reduce the amount of waste being sent...
  - BAT 42: In order to prevent or reduce the amount of waste...
  - BAT 43: In order to reduce the generation of coke (which is...
  - BAT 44: In order to reduce the amount of organic residues being...
- 5. BAT CONCLUSIONS FOR FORMALDEHYDE PRODUCTION
  - 5.1. Emissions to air
    - BAT 45: In order to reduce emissions of organic compounds to air...
  - 5.2. Emissions to water
    - BAT 46: In order to prevent or reduce waste water generation (e.g....
  - 5.3. Residues
    - BAT 47: In order to reduce the amount of paraformaldehyde-containing waste being...
- 6. BAT CONCLUSIONS FOR ETHYLENE OXIDE AND ETHYLENE GLYCOLS PRODUCTION
  - 6.1. Process selection
    - BAT 48: In order to reduce the consumption of ethylene and emissions...
  - 6.2. Emissions to air
    - BAT 49: In order to recover ethylene and energy and to reduce...
    - BAT 50: In order to reduce the consumption of ethylene and oxygen...
    - BAT 51: In order to reduce emissions of organic compounds to air...
    - BAT 52: In order to reduce EO emissions to air, BAT is...
    - BAT 53: In order to prevent or reduce emissions of organic compounds...
  - 6.3. Emissions to water
    - BAT 54: In order to reduce the waste water volume and to...
  - 6.4. Residues
    - BAT 55: In order to reduce the amount of organic waste being...
- 7. BAT CONCLUSIONS FOR PHENOL PRODUCTION
  - 7.1. Emissions to air
    - BAT 56: In order to recover raw materials and to reduce the...
    - BAT 57: In order to reduce emissions of organic compounds to air,...
  - 7.2. Emissions to water
    - BAT 58: In order to reduce emissions to water of organic peroxides...
    - BAT 59: In order to reduce the organic load discharged from the...
  - 7.3. Residues
    - BAT 60: In order to prevent or reduce the amount of tar...
- 8. BAT CONCLUSIONS FOR ETHANOLAMINES PRODUCTION
  - 8.1. Emissions to air
    - BAT 61: In order to reduce ammonia emissions to air and to...
  - 8.2. Emissions to water
    - BAT 62: In order to prevent or reduce emissions of organic compounds...
  - 8.3. Raw material consumption
    - BAT 63: In order to use ethylene oxide efficiently, BAT is to...

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9. BAT CONCLUSIONS FOR TOLUENE DIISOCYANATE (TDI) AND METHYLENE DIPHENYL DIISOCYANATE...
  - 9.1. Emissions to air
    - BAT 64: In order to reduce the load of organic compounds, NOX,...
    - BAT 65: In order to reduce the load of HCl and phosgene...
    - BAT 66: In order to reduce emissions to air of organic compounds...
    - BAT 67: In order to reduce emissions to air of PCDD/F from...
  - 9.2. Emissions to water
    - BAT 68: BAT is to monitor emissions to water with at least...
    - BAT 69: In order to reduce the load of nitrite, nitrate and...
    - BAT 70: In order to reduce the load of poorly biodegradable organic...
    - BAT 71: In order to reduce waste water generation and the organic...
    - BAT 72: In order to prevent or reduce the organic load discharged...
    - BAT 73: In order to reduce the organic load discharged from a...
  - 9.3. Residues
    - BAT 74: In order to reduce the amount of organic residues being...
10. BAT CONCLUSIONS FOR ETHYLENE DICHLORIDE AND VINYL CHLORIDE MONOMER PRODUCTION...
  - 10.1. Emissions to air
    - 10.1.1. BAT-AEL for emissions to air from an EDC cracker furnace...
    - 10.1.2. Techniques and BAT-AEL for emissions to air from other sources...
      - BAT 75: In order to reduce the organic load sent to the...
      - BAT 76: In order to reduce emissions to air of organic compounds...
      - BAT 77: In order to reduce emissions to air of PCDD/F from...
      - BAT 78: In order to reduce emissions to air of dust and...
  - 10.2. Emissions to water
    - BAT 79: BAT is to monitor emissions to water with at least...
    - BAT 80: In order to reduce the load of chlorinated compounds discharged...
    - BAT 81: In order to reduce emissions to water of PCDD/F and...
  - 10.3. Energy efficiency
    - BAT 82: In order to use energy efficiently, BAT is to use...
    - BAT 83: In order to reduce the energy consumption of EDC cracker...
  - 10.4. Residues
    - BAT 84: In order to reduce the amount of coke being sent...
    - BAT 85: In order to reduce the amount of hazardous waste being...
11. BAT CONCLUSIONS FOR HYDROGEN PEROXIDE PRODUCTION
  - 11.1. Emissions to air
    - BAT 86: In order to recover solvents and to reduce emissions of...
    - BAT 87: In order to reduce emissions of organic compounds to air...
    - BAT 88: In order to prevent benzene emissions to air and water,...
  - 11.2. Emissions to water
    - BAT 89: In order to reduce the waste water volume and the...
    - BAT 90: In order to prevent or reduce emissions to water of...
12. DESCRIPTIONS OF TECHNIQUES
  - 12.1. Process off-gas and waste gas treatment techniques
  - 12.2. Waste water treatment techniques
  - 12.3. Techniques to reduce emissions to air from combustion

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- (1) [OJ L 334, 17.12.2010, p. 17.](#)
- (2) Commission Decision of 16 May 2011 establishing a forum for the exchange of information pursuant to Article 13 of the Directive 2010/75/EU on industrial emissions ([OJ C 146, 17.5.2011, p. 3](#)).

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**Changes and effects yet to be applied to :**

- Art. 2 substituted by [S.I. 2018/1407 reg. 21\(2\)](#)