

29 January 2021  
Or. GERMAN

JOINT MEETING OF EXPERTS ON THE REGULATIONS  
ANNEXED TO THE EUROPEAN AGREEMENT CONCERNING THE  
INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY  
INLAND WATERWAYS (ADN)  
(SAFETY COMMITTEE)

## **Summary document for the catalogue of questions "Gas"**

**Transmitted by the Central Commission for the Navigation of the Rhine**

| Number                                    | Source  | Response | Remarks        | Dealt with on |
|---|---|----------|----------------|---------------|
| <b>Knowledge of physics and chemistry</b> |   |          |                |               |
| <b>Objective 1.1</b>                      |   |          |                |               |
| 231 01.1-01                               | Boyle-Mariotte law: $pV=\text{constant}$  | C        |                | 28.09.2016    |
| 231 01.1-02                               | Boyle-Mariotte law: $pV=\text{constant}$  | C        |                | 10.12.2020    |
| 231 01.1-03                               | Boyle-Mariotte law: $pV=\text{constant}$  | B        | Only in German | 10.12.2020    |
| 231 01.1-04                               | Boyle-Mariotte law: $pV=\text{constant}$  | A        |                | 28.09.2016    |
| 231 01.1-05                               | Boyle-Mariotte law: $pV=\text{constant}$  | B        |                | 28.09.2016    |
| 231 01.1-06                               | Gay-Lussac law: $p/T=\text{constant}$   | C        |                | 28.09.2016    |
| 231 01.1-07                               | Gay-Lussac law: $p/T=\text{constant}$   | D        |                | 10.12.2020    |
| 231 01.1-08                               | Gay-Lussac law: $p/T=\text{constant}$   | B        |                | 20.09.2018    |
| 231 01.1-09                               | Gay-Lussac law: $p/T=\text{constant}$   | C        |                | 20.09.2018    |
| 231 01.1-10                               | Gay-Lussac law: $p/T=\text{constant}$   | B        |                | 28.09.2016    |
| <b>Objective 1.2</b>                      |   |          |                |               |
| 231 01.2-01                               | Fundamental law of gases:<br>$pV/T=\text{constant}$                               | A        |                | 28.09.2016    |
| 231 01.2-02                               | Fundamental law of gases:<br>$pV/T=\text{constant}$                               | B        | Only in German | 10.12.2020    |
| 231 01.2-03                               | Fundamental law of gases:<br>$pV/T=\text{constant}$                               | D        | Only in German | 10.12.2020    |
| 231 01.2-04                               | Fundamental law of gases:<br>$pV/T=\text{constant}$                               | C        |                | 20.09.2018    |
| 231 01.2-05                               | Fundamental law of gases:<br>$pV/T=\text{constant}$                               | D        |                | 28.09.2016    |
| 231 01.2-06                               | Fundamental law of gases:<br>$pV/T=\text{constant}$                               | B        |                | 28.09.2016    |
| 231 01.2-07                               | Fundamental law of gases:<br>$pV/T=\text{constant}$                               | A        |                | 28.09.2016    |
| 231 01.2-08                               | Fundamental law of gases:<br>$pV/T=\text{constant}$                               | B        |                | 28.09.2016    |
| 231 01.2-09                               | Fundamental law of gases:<br>$pV/T=\text{constant}$                               | A        |                | 28.09.2016    |
| 231 01.2-10                               | Fundamental law of gases:<br>$pV/T=\text{constant}$                               | C        |                | 28.09.2016    |
| <b>Objective 2.1</b>                      |   |          |                |               |
| 231 02.1-01                               | Partial pressure – definitions  | B        |                | 10.12.2020    |
| 231 02.1-02                               | Partial pressure – definitions  | C        |                | 10.12.2020    |
| 231 02.1-03                               | $p_{\text{tot}} = \sum p_i$ and $\text{Vol.-%} = p_i \times 100 / p_{\text{tot}}$ | D        |                | 20.09.2018    |
| 231 02.1-04                               | $p_{\text{tot}} = \sum p_i$ and $\text{Vol.-%} = p_i \times 100 / p_{\text{tot}}$ | C        |                | 28.09.2016    |
| 231 02.1-05                               | $p_{\text{tot}} = \sum p_i$ and $\text{Vol.-%} = p_i \times 100 / p_{\text{tot}}$ | B        |                | 28.09.2016    |

| Number               | Source  | Response | Remarks | Dealt with on |
|----------------------|---|----------|---------|---------------|
| 231 02.1-06          |   |          | deleted | 06.06.2011    |
| 231 02.1-07          | $p_{tot} = \sum p_i$ and Vol.-% = $p_i \times 100 / p_{tot}$                                    | B        |         | 28.09.2016    |
| 231 02.1-08          | $p_{tot} = \sum p_i$ and Vol.-% = $p_i \times 100 / p_{tot}$                                    | C        |         | 28.09.2016    |
| 231 02.1-09          | $p_{tot} = \sum p_i$ and Vol.-% = $p_i \times 100 / p_{tot}$                                    | D        |         | 28.09.2016    |
|                      |   |          |         |               |
| <b>Objective 2.2</b> |   |          |         |               |
|                      |   |          |         |               |
| 231 02.2-01          | $p_{tot} = \sum p_i$ and Vol.-% = $p_i \times 100 / p_{tot}$ and $p * V = constant$             | B        |         | 28.09.2016    |
| 231 02.2-02          | $p_{tot} = \sum p_i$ and Vol.-% = $p_i \times 100 / p_{tot}$ and $p * V = constant$             | D        |         | 10.12.2020    |
| 231 02.2-03          | $p_{tot} = \sum p_i$ and Vol.-% = $p_i \times 100 / p_{tot}$ and $p * V = constant$             | B        |         | 10.12.2020    |
| 231 02.2-04          | $p_{tot} = \sum p_i$ and Vol.-% = $p_i \times 100 / p_{tot}$ and $p * V = constant$             | D        |         | 10.12.2020    |
| 231 02.2-05          | $p_{tot} = \sum p_i$ and Vol.-% = $p_i \times 100 / p_{tot}$ and $p * V = constant$             | A        |         | 10.12.2020    |
| 231 02.2-06          | $p_{tot} = \sum p_i$ and Vol.-% = $p_i \times 100 / p_{tot}$ and $p * V = constant$             | C        |         | 28.09.2016    |
| 231 02.2-07          | $p_{tot} = \sum p_i$ and Vol.-% = $p_i \times 100 / p_{tot}$ and $p * V = constant$             | C        |         | 10.12.2020    |
| 231 02.2-08          | Characteristics of substances   | D        |         | 28.09.2016    |
|                      |   |          |         |               |
| <b>Objective 3.1</b> |   |          |         |               |
|                      |   |          |         |               |
| 231 03.1-01          | 1 kmol ideal gas = 24 m <sup>3</sup> at 100 kPa and 25 °C, quantity of substance = M *mass [kg] | B        |         | 28.09.2016    |
| 231 03.1-02          | 1 kmol ideal gas = 24 m <sup>3</sup> at 100 kPa and 25 °C, quantity of substance = M *mass [kg] | A        |         | 28.09.2016    |
| 231 03.1-03          | 1 kmol ideal gas = 24 m <sup>3</sup> at 100 kPa and 25 °C, quantity of substance = M *mass [kg] | B        |         | 28.09.2016    |
| 231 03.1-04          | 1 kmol ideal gas = 24 m <sup>3</sup> at 100 kPa and 25 °C, quantity of substance = M *mass [kg] | A        |         | 28.09.2016    |
| 231 03.1-05          | 1 kmol ideal gas = 24 m <sup>3</sup> at 100 kPa and 25 °C, quantity of substance = M *mass [kg] | B        |         | 10.12.2020    |
| 231 03.1-06          | 1 kmol ideal gas = 24 m <sup>3</sup> at 100 kPa and 25 °C, quantity of substance = M *mass [kg] | C        |         | 10.12.2020    |
| 231 03.1-07          | 1 kmol ideal gas = 24 m <sup>3</sup> at 100 kPa and 25 °C, quantity of substance = M *mass [kg] | B        |         | 28.09.2016    |

| Number               | Source  | Response | Remarks        | Dealt with on |
|----------------------|---|----------|----------------|---------------|
| 231 03.1-08          | 1 kmol ideal gas = 24 m <sup>3</sup> at 100 kPa and 25 °C, quantity of substance = $M \cdot \text{mass [kg]}$ | D        |                | 10.12.2020    |
| 231 03.1-09          | 1 kmol ideal gas = 24 m <sup>3</sup> at 100 kPa and 25 °C, quantity of substance = $M \cdot \text{mass [kg]}$ | C        |                | 28.09.2016    |
| 231 03.1-10          | 1 kmol ideal gas = 24 m <sup>3</sup> at 100 kPa and 25 °C, quantity of substance = $M \cdot \text{mass [kg]}$ | C        |                | 28.09.2016    |
| <b>Objective 3.2</b> |   |          |                |               |
| 231 03.2-01          | $m = 0,12 \cdot p \cdot M \cdot V / T$  | B        |                | 28.09.2016    |
| 231 03.2-02          | $m = 0,12 \cdot p \cdot M \cdot V / T$  | A        |                | 28.09.2016    |
| 231 03.2-03          | $m = 0,12 \cdot p \cdot M \cdot V / T$  | B        |                | 28.09.2016    |
| 231 03.2-04          | $m = 0,12 \cdot p \cdot M \cdot V / T$  | C        |                | 28.09.2016    |
| 231 03.2-05          | $m = 0,12 \cdot p \cdot M \cdot V / T$  | A        |                | 28.09.2016    |
| 231 03.2-06          | $m = 0,12 \cdot p \cdot M \cdot V / T$<br>or $p = m \cdot T / (0,12 \cdot M \cdot V)$                         | D        |                | 28.09.2016    |
| 231 03.2-07          | $m = 0,12 \cdot p \cdot M \cdot V / T$<br>or $p = m \cdot T / (0,12 \cdot M \cdot V)$                         | D        |                | 28.09.2016    |
| 231 03.2-08          | $m = 0,12 \cdot p \cdot M \cdot V / T$<br>or $p = m \cdot T / (0,12 \cdot M \cdot V)$                         | C        |                | 28.09.2016    |
| 231 03.2-09          | $m = 0,12 \cdot p \cdot M \cdot V / T$<br>or $p = m \cdot T / (0,12 \cdot M \cdot V)$                         | D        |                | 28.09.2016    |
| 231 03.2-10          | $m = 0,12 \cdot p \cdot M \cdot V / T$<br>or $p = m \cdot T / (0,12 \cdot M \cdot V)$                         | D        |                | 20.09.2018    |
| <b>Objective 4.1</b> |   |          |                |               |
| 231 04.1-01          | $m = \rho_{t1} \cdot V_{t1} = \rho_{t2} \cdot V_{t2}$ (with tables)   | C        |                | 10.12.2020    |
| 231 04.1-02          | $m = \rho_{t1} \cdot V_{t1} = \rho_{t2} \cdot V_{t2}$ (with tables)   | B        |                | 10.12.2020    |
| 231 04.1-03          | $m = \rho_{t1} \cdot V_{t1} = \rho_{t2} \cdot V_{t2}$ (with tables)   | C        |                | 10.12.2020    |
| 231 04.1-04          | $m = \rho_{t1} \cdot V_{t1} = \rho_{t2} \cdot V_{t2}$ (with tables)   | B        |                | 10.12.2020    |
| 231 04.1-05          | $m = \rho_{t1} \cdot V_{t1} = \rho_{t2} \cdot V_{t2}$ (with tables)   | B        |                | 06.06.2011    |
| 231 04.1-06          | $m = \rho_{t1} \cdot V_{t1} = \rho_{t2} \cdot V_{t2}$ (with tables)   | C        |                | 06.06.2011    |
| 231 04.1-07          | $m = \rho_{t1} \cdot V_{t1} = \rho_{t2} \cdot V_{t2}$ (with tables)   | C        |                | 06.06.2011    |
| 231 04.1-08          | $m = \rho_{t1} \cdot V_{t1} = \rho_{t2} \cdot V_{t2}$ (with tables)   | B        |                | 06.06.2011    |
| 231 04.1-09          | $m = \rho_{t1} \cdot V_{t1} = \rho_{t2} \cdot V_{t2}$ (with tables)   | C        |                | 06.06.2011    |
| 231 04.1-10          | $m = \rho_{t1} \cdot V_{t1} = \rho_{t2} \cdot V_{t2}$ (with tables)   | B        |                | 06.06.2011    |
| <b>Objective 4.2</b> |   |          |                |               |
| 231 04.2-01          |   |          | deleted (2011) | 06.06.2011    |
| 231 04.2-02          |   |          | deleted (2011) | 06.06.2011    |
| 231 04.2-03          |   |          | deleted (2011) | 06.06.2011    |
| 231 04.2-04          |   |          | deleted (2011) | 06.06.2011    |

| Number               | Source                            | Response | Remarks        | Dealt with on |
|----------------------|-----------------------------------|----------|----------------|---------------|
| 231 04.2-05          |                                   |          | deleted (2011) | 06.06.2011    |
| 231 04.2-06          |                                   |          | deleted (2011) | 06.06.2011    |
| 231 04.2-07          |                                   |          | deleted (2011) | 06.06.2011    |
| 231 04.2-08          |                                   |          | deleted (2011) | 06.06.2011    |
| 231 04.2-09          |                                   |          | deleted (2011) | 06.06.2011    |
| 231 04.2-10          |                                   |          | deleted (2011) | 06.06.2011    |
|                      |                                   |          |                |               |
| <b>Objective 5</b>   |                                   |          |                |               |
|                      |                                   |          |                |               |
| 231 05.0-01          | Critical pressure and temperature | A        |                | 10.12.2020    |
| 231 05.0-02          | Critical pressure and temperature | C        |                | 10.12.2020    |
| 231 05.0-03          | Critical pressure and temperature | B        |                | 10.12.2020    |
| 231 05.0-04          | Critical pressure and temperature | A        |                | 10.12.2020    |
|                      |                                   |          |                |               |
| <b>Objective 6.1</b> |                                   |          |                |               |
|                      |                                   |          |                |               |
| 231 06.1-01          | Polymerization                    | C        |                | 06.06.2011    |
| 231 06.1-02          | Polymerization                    | A        |                | 30.09.2014    |
| 231 06.1-03          | Polymerization                    | B        |                | 06.06.2011    |
| 231 06.1-04          | Polymerization                    | B        |                | 30.09.2014    |
| 231 06.1-05          | Polymerization                    | D        |                | 10.12.2020    |
|                      |                                   |          |                |               |
| <b>Objective 6.2</b> |                                   |          |                |               |
|                      |                                   |          |                |               |
| 231 06.2-01          | 3.2.3.2, Table C                  | C        |                | 30.09.2014    |
| 231 06.2-02          | Polymerization                    | C        |                | 10.12.2020    |
| 231 06.2-03          | Polymerization                    | D        |                | 28.09.2016    |
| 231 06.2-04          | Polymerization                    | A        |                | 06.06.2011    |
| 231 06.2-05          | 3.2.3.2, Table C                  | A        |                | 10.12.2020    |
| 231 06.2-06          | 3.2.3.2, Table C                  | D        |                | 28.09.2016    |
| 231 06.2-07          | Polymerization                    | B        |                | 10.12.2020    |
| 231 06.2-08          |                                   |          | deleted (2007) | 06.06.2011    |
| 231 06.2-09          | Polymerization                    | C        |                | 10.12.2020    |
|                      |                                   |          |                |               |
| <b>Objective 7.1</b> |                                   |          |                |               |
|                      |                                   |          |                |               |
| 231 07.1-01          | Vapour pressure                   | A        |                | 06.06.2011    |
| 231 07.1-02          | Vapour pressure                   | B        |                | 30.09.2014    |
| 231 07.1-03          | Vapour pressure                   | C        |                | 30.09.2014    |
| 231 07.1-04          | Vapour pressure                   | D        |                | 06.06.2011    |
| 231 07.1-05          | Vapour pressure                   | A        |                | 06.06.2011    |
| 231 07.1-06          | Vapour pressure                   | B        |                | 10.12.2020    |
| 231 07.1-07          | Vapour pressure                   | C        |                | 06.06.2011    |
| 231 07.1-08          | Vapour pressure                   | D        |                | 06.06.2011    |
| 231 07.1-09          | Vapour pressure                   | A        |                | 06.06.2011    |
| 231 07.1-10          | Vapour pressure                   | B        |                | 28.09.2016    |

| Number               | Source   | Response | Remarks        | Dealt with on |
|----------------------|--|----------|----------------|---------------|
| 231 07.1-11          | Influence on the cargo of an increase in temperature | B        |                | 28.09.2016    |
| 231 07.1-12          | Change in cargo temperature, general knowledge       | B        |                | 28.09.2016    |
| 231 07.1-13          | Characteristics of substances, 1.2.1                 | A        |                | 30.09.2014    |
| 231 07.1-14          | Characteristics of substances                        | B        |                | 30.09.2014    |
| <b>Objective 7.2</b> |  |          |                |               |
| 231 07.2-01          |  |          | deleted (2007) | 06.06.2011    |
| 231 07.2-02          |  |          | deleted (2007) | 06.06.2011    |
| 231 07.2-03          | Increase in temperature in the cargo tank            | C        |                | 28.09.2016    |
| 231 07.2-04          | Pressure in the cargo tank                           | D        |                | 28.09.2016    |
| 231 07.2-05          | Behaviour of pressure in the cargo tank              | C        |                | 20.09.2018    |
| 231 07.2-06          | Behaviour of pressure in the cargo tank              | D        |                | 10.12.2020    |
| 231 07.2-07          |  |          | deleted (2007) | 06.06.2011    |
| 231 07.2-08          | Vapour saturation pressure                           | B        |                | 20.09.2018    |
| 231 07.2-09          | Liquefying of gas                                    | A        |                | 20.09.2018    |
| <b>Objective 8.1</b> |  |          |                |               |
| 231 08.1-01          | Saturation vapour pressure, depending on composition | B        |                | 06.06.2011    |
| 231 08.1-02          | Saturation vapour pressure, depending on composition | C        |                | 06.06.2011    |
| 231 08.1-03          | Saturation vapour pressure, depending on composition | A        |                | 06.06.2011    |
| 231 08.1-04          |  |          | deleted (2007) | 06.06.2011    |
| 231 08.1-05          |  |          | deleted (2007) | 06.06.2011    |
| 231 08.1-06          |  |          | deleted (2007) | 06.06.2011    |
| <b>Objective 8.2</b> |  |          |                |               |
| 231 08.2-01          | Health risks   | C        |                | 06.06.2011    |
| 231 08.2-02          | Health risks   | B        |                | 06.06.2011    |
| 231 08.2-03          | Health risks   | B        |                | 10.12.2020    |
| 231 08.2-04          | Health risks   | C        |                | 10.12.2020    |
| 231 08.2-05          | Health risks   | A        |                | 13.09.2012    |
| 231 08.2-06          | Hazard characteristics                               | C        |                | 13.09.2012    |
| 231 08.2-07          | Hazard characteristics                               | C        |                | 10.12.2020    |
| 231 08.2-08          | Hazard characteristics                               | C        |                | 10.12.2020    |
| 231 08.2-09          | Characteristics of substances                        | D        |                | 30.09.2014    |
| 231 08.2-10          | Characteristics of substances                        | C        |                | 30.09.2014    |

| Number               | Source   | Response | Remarks        | Dealt with on |
|----------------------|--|----------|----------------|---------------|
| 231 08.2-11          | Characteristics of substances                    | A        |                | 28.09.2016    |
|                      |  |          |                |               |
| <b>Objective 9</b>   |  |          |                |               |
|                      |  |          |                |               |
| 231 09.0-01          | Polymerization                                   | A        |                | 06.06.2011    |
| 231 09.0-02          | Molecular mass                                   | D        |                | 30.09.2014    |
| 231 09.0-03          | Molecular mass                                   | C        |                | 30.09.2014    |
| 231 09.0-04          | Molecular mass                                   | B        |                | 30.09.2014    |
| 231 09.0-05          | Molecular mass                                   | A        |                | 30.09.2014    |
| 231 09.0-06          |  |          | deleted (2007) | 06.06.2011    |
| 231 09.0-07          |  |          | deleted (2007) | 06.06.2011    |
| 231 09.0-08          | Molecular mass                                   | A        |                | 30.09.2014    |
|                      |  |          |                |               |
| <b>Practice</b>      |  |          |                |               |
|                      |  |          |                |               |
| <b>Objective 1.1</b> |  |          |                |               |
|                      |  |          |                |               |
| 232 01.1-01          | Flushing in the event of a change of cargo       | C        |                | 10.12.2020    |
| 232 01.1-02          | Flushing in the event of a change of cargo       | C        |                | 10.12.2020    |
| 232 01.1-03          | Table C, column (20), remark 2                   | A        |                | 10.12.2020    |
| 232 01.1-04          | Flushing in the event of a change of cargo       | A        |                | 10.12.2020    |
| 232 01.1-05          | Flushing in the event of a change of cargo       | D        |                | 10.12.2020    |
| 232 01.0-06          | 9.3.1.21.12                                      | C        |                | 28.09.2016    |
|                      |  |          |                |               |
| <b>Objective 1.2</b> |  |          |                |               |
|                      |  |          |                |               |
| 232 01.2-01          | Table C, column (20), remark 2                   | D        |                | 10.12.2020    |
| 232 01.2-02          | Table C, column (20), remark 2                   | C        |                | 10.12.2020    |
| 232 01.2-03          | Table C, column (20), remark 2                   | B        |                | 10.12.2020    |
| 232 01.2-04          | Table C, column (20), remark 2                   | B        |                | 10.12.2020    |
| 232 01.2-05          | Table C, column (20), remark 2                   | C        |                | 10.12.2020    |
|                      |  |          |                |               |
| <b>Objective 1.3</b> |  |          |                |               |
|                      |  |          |                |               |
| 232 01.3-01          | Methods for flushing (degassing)                 | D        |                | 10.12.2020    |
| 232 01.3-02          | Methods for flushing (degassing)                 | D        |                | 10.12.2020    |
| 232 01.3-03          | Methods for flushing (degassing)                 | C        |                | 10.12.2020    |
| 232 01.3-04          | Methods for flushing (degassing)                 | A        |                | 10.12.2020    |
| 232 01.3-05          | Flushing (degassing) at the same time as repairs | B        |                | 06.06.2011    |

| Number             | Source  | Response | Remarks                    | Dealt with on |
|--------------------|---|----------|----------------------------|---------------|
| 232 01.3-06        | Flushing (degassing) in connection with repair work | C        |                            | 06.06.2011    |
| 232 01.3-07        | 7.2.3.1.6   | B        |                            | 10.12.2020    |
| 232 01.3-08        | Longitudinal flushing                               | C        |                            | 10.12.2020    |
| 232 01.3-09        |   |          | deleted (2007)             | 06.06.2011    |
|                    |   |          |                            |               |
| <b>Objective 2</b> |   |          |                            |               |
|                    |   |          |                            |               |
| 232 02.0-01        |   |          | deleted (2010)             | 06.06.2011    |
| 232 02.0-02        |   |          | deleted (2010)             | 06.06.2011    |
| 232 02.0-03        | Flushing/rinsing of test tubes                      | D        |                            | 06.06.2011    |
| 232 02.0-04        | Flushing/rinsing of test tubes                      | A        |                            | 06.06.2011    |
| 232 02.0-05        | Sampling during longitudinal flushing               | C        |                            | 06.06.2011    |
| 232 02.0-06        |   |          | deleted (2007)             | 06.06.2011    |
| 232 02.0-07        | 7.2.4.1.1 Storage of samples in test tubes          | A        |                            | 30.09.2014    |
| 232 02.0-08        | Flushing of the cargo tanks                         | C        |                            | 06.06.2011    |
| 232 02.0-09        |   |          | deleted (2007)             | 06.06.2011    |
| 232 02.0-10        | Taking of samples                                   | B        |                            | 06.06.2011    |
|                    |   |          |                            |               |
| <b>Objective 3</b> |   |          |                            |               |
|                    |   |          |                            |               |
| 232 03.0-01        | Definition of explosive limit                       | A        |                            | 06.06.2011    |
| 232 03.0-02        | Definition of explosive limit                       | C        |                            | 10.12.2020    |
| 232 03.0-03        | Definition of explosive limit                       | D        |                            | 06.06.2011    |
| 232 03.0-04        | Definition of explosive limit                       | D        |                            | 28.09.2016    |
| 232 03.0-05        | Definition of explosive limit                       | A        |                            | 06.06.2011    |
| 232 03.0-06        | Critical dilution rate                              | B        |                            | 20.09.2018    |
| 232 03.0-07        | Critical dilution rate                              | C        |                            | 30.09.2014    |
| 232 03.0-08        | Risk of explosion                                   | B        |                            | 06.06.2011    |
| 232 03.0-09        | Explosive limit and static electricity              | D        |                            | 20.09.2018    |
|                    |   |          |                            |               |
| <b>Objective 4</b> |   |          |                            |               |
|                    |   |          |                            |               |
| 232 04.0-01        | Imminent hazards                                    | A        |                            | 06.06.2011    |
| 232 04.0-02        | Delayed effect                                      | B        | Only in French and English | 10.12.2020    |
| 232 04.0-03        | Anaesthetizing effect                               | D        |                            | 06.06.2011    |
| 232 04.0-04        | Definition of the maximum workplace concentration   | C        |                            | 06.06.2011    |
| 232 04.0-05        | Definition of the maximum workplace concentration   | C        |                            | 06.06.2011    |
| 232 04.0-06        | Exceeding the maximum workplace concentration       | B        |                            | 06.06.2011    |
| 232 04.0-07        | Maximum workplace concentration – odour threshold   | A        |                            | 06.06.2011    |
| 232 04.0-08        |   |          | deleted (2007)             | 06.06.2011    |



| Number               | Source                                 | Response | Remarks        | Dealt with on |
|----------------------|--|----------|----------------|---------------|
| 232 04.0-09          | Asphyxiation                           | C        |                | 06.06.2011    |
|                      |  |          |                |               |
| <b>Objective 5.1</b> |  |          |                |               |
|                      |  |          |                |               |
| 232 05.1-01          | Measuring gas concentration            | D        |                | 06.06.2011    |
| 232 05.1-02          | Measuring gas concentration            | A        |                | 06.06.2011    |
| 232 05.1-03          | Measuring gas concentration            | B        |                | 06.06.2011    |
| 232 05.1-04          | Measuring gas concentration            | C        |                | 06.06.2011    |
| 232 05.1-05          | Measuring gas concentration            | D        |                | 13.09.2012    |
| 232 05.1-06          | Measuring gas concentration            | A        |                | 06.06.2011    |
| 232 05.1-07          | Measuring gas concentration            | B        |                | 10.12.2020    |
| 232 05.1-08          | Measuring gas concentration            | C        |                | 10.12.2020    |
| 232 05.1-09          | Measuring gas concentration            | A        |                | 20.09.2018    |
| 232 05.1-10          | Measuring gas concentration            | D        |                | 10.12.2020    |
|                      |  |          |                |               |
| <b>Objective 5.2</b> |  |          |                |               |
|                      |  |          |                |               |
| 232 05.2-01          | Measuring gas concentration            | A        |                | 10.12.2020    |
| 232 05.2-02          | Measuring gas concentration            | D        |                | 06.06.2011    |
| 232 05.2-03          | Measuring gas concentration            | A        |                | 10.12.2020    |
| 232 05.2-04          | Measuring gas concentration            | D        |                | 10.12.2020    |
| 232 05.2-05          | Measuring gas concentration            | A        |                | 10.12.2020    |
| 232 05.2-06          | Measuring gas concentration            | D        |                | 10.12.2020    |
| 232 05.2-07          | Measuring gas concentration            | A        |                | 10.12.2020    |
| 232 05.2-08          | Measuring gas concentration            | A        |                | 10.12.2020    |
| 232 05.2-09          | Measuring gas concentration            | B        |                | 10.12.2020    |
| 232 05.2-10          |  |          | deleted (2007) | 06.06.2011    |
|                      |  |          |                |               |
| <b>Objective 6</b>   |  |          |                |               |
|                      |  |          |                |               |
| 232 06.0-01          | Measuring gas concentration            | B        |                | 06.06.2011    |
| 232 06.0-02          | Measuring gas concentration, 7.2.3.1.6 | A        |                | 10.12.2020    |
| 232 06.0-03          |  |          | deleted (2007) | 06.06.2011    |
| 232 06.0-04          | Measuring gas concentration            | C        |                | 30.09.2014    |
| 232 06.0-05          | Measuring gas concentration            | A        |                | 20.09.2018    |
| 232 06.0-06          | 7.2.3.1.6                              | D        |                | 10.12.2020    |
| 232 06.0-07          | Measuring gas concentration            | D        |                | 10.12.2020    |
| 232 06.0-08          | 7.2.3.1.6                              | C        |                | 10.12.2020    |
| 232 06.0-09          | Measuring gas concentration            | C        |                | 10.12.2020    |
| 232 06.0-10          |  |          | deleted (2016) | 28.09.2016    |
|                      |  |          |                |               |
| <b>Objective 7</b>   |  |          |                |               |
|                      |  |          |                |               |
| 232 07.0-01          | Measuring gas concentration            | B        |                | 30.09.2014    |
| 232 07.0-02          | Measuring gas concentration            | B        |                | 10.12.2020    |
| 232 07.0-03          | 8.3.5                                  | C        |                | 10.12.2020    |

| Number              | Source                                 | Response | Remarks | Dealt with on |
|---------------------|--|----------|---------|---------------|
| 232 07.0-04         | 8.3.5                                  | A        |         | 10.12.2020    |
| 232 07.0-05         | 8.3.5                                  | D        |         | 10.12.2020    |
| 232 07.0-06         | 8.3.5                                  | A        |         | 10.12.2020    |
| 232 07.0-07         | 7.2.3.1.6                              | A        |         | 20.09.2018    |
| 232 07.0-08         | 8.3.5                                  | A        |         | 10.12.2020    |
| 232 07.0-09         | 8.3.5                                  | C        |         | 10.12.2020    |
| 232 07.0-10         | 8.3.5                                  | D        |         | 10.12.2020    |
|                     |  |          |         |               |
| <b>Objective 8</b>  |  |          |         |               |
|                     |  |          |         |               |
| 232 08.0-01         | 1.2.1                                  | C        |         | 20.09.2018    |
| 232 08.0-02         | Degree of filling                      | D        |         | 10.12.2020    |
| 232 08.0-03         | Degree of filling                      | C        |         | 20.09.2018    |
| 232 08.0-04         | Degree of filling                      | A        |         | 10.12.2020    |
| 232 08.0-05         | Degree of filling                      | B        |         | 10.12.2020    |
| 232 08.0-06         | Degree of filling                      | A        |         | 10.12.2020    |
| 232 08.0-07         | Overfilling                            | C        |         | 06.06.2011    |
| 232 08.0-08         | 9.3.1.21.1                             | D        |         | 28.09.2016    |
| 232 08.0-09         | 9.3.1.21.1                             | A        |         | 06.06.2011    |
| 232 08.0-10         | Degree of filling                      | B        |         | 10.12.2020    |
| 232 08.0-11         | 7.2.4.16.16                            | B        |         | 20.09.2018    |
| 232 08.0-12         | 7.2.4.16.17                            | A        |         | 28.09.2016    |
| 232 08.0-13         | 7.2.4.16.17                            | C        |         | 28.09.2016    |
|                     |  |          |         |               |
| <b>Objective 9</b>  |  |          |         |               |
|                     |  |          |         |               |
| 232 09.0-01         | Safety against bursts in the piping    | A        |         | 13.09.2012    |
| 232 09.0-02         | Safety against bursts in the piping    | C        |         | 06.06.2011    |
| 232 09.0-03         | Safety against bursts in the piping    | D        |         | 06.06.2011    |
| 232 09.0-04         | Safety against bursts in the piping    | B        |         | 06.06.2011    |
| 232 09.0-05         | Safety against bursts in the piping    | A        |         | 10.12.2020    |
| 232 09.0-06         | 9.3.1.21.9                             | A        |         | 20.09.2018    |
| 232 09.0-07         | 7.2.2.21                               | B        |         | 20.09.2018    |
| 232 09.0-08         | 7.2.2.21                               | C        |         | 20.09.2018    |
| 232 09.0-09         | Rapid closing system                   | C        |         | 10.12.2020    |
| 232 09.0-10         | Rapid closing system                   | A        |         | 13.09.2012    |
| 232 09.0-11         | 9.3.1.21.11                            | D        |         | 28.09.2016    |
| 232 09.0-12         | Treatment of the cargo, 9.3.1.24.1 (a) | B        |         | 10.12.2020    |
|                     |  |          |         |               |
| <b>Objective 10</b> |  |          |         |               |
|                     |  |          |         |               |
| 232 10.0-01         | Unloading of the cargo                 | C        |         | 06.06.2011    |
| 232 10.0-02         | Unloading of the cargo                 | D        |         | 06.06.2011    |
| 232 10.0-03         | Unloading of the cargo                 | A        |         | 06.06.2011    |
| 232 10.0-04         | Deck pumps                             | B        |         | 06.06.2011    |
| 232 10.0-05         | Compressors                            | C        |         | 06.06.2011    |

| Number                    | Source                        | Response | Remarks | Dealt with on |
|---------------------------|-------------------------------|----------|---------|---------------|
| 232 10.0-06               | Compressors                   | D        |         | 06.06.2011    |
| 232 10.0-07               | Deck pumps                    | A        |         | 06.06.2011    |
| 232 10.0-08               | Compressors                   | C        |         | 06.06.2011    |
| 232 10.0-09               | Compressors                   | B        |         | 20.09.2018    |
|                           |                               |          |         |               |
| <b>Emergency measures</b> |                               |          |         |               |
|                           |                               |          |         |               |
| <b>Objective 1.1</b>      |                               |          |         |               |
|                           |                               |          |         |               |
| 233 01.1-01               | Liquefied gas on skin         | B        |         | 10.12.2020    |
| 233 01.1-02               | Liquefied gas on skin         | A        |         | 10.12.2020    |
| 233 01.1-03               | Liquefied gas on skin         | C        |         | 10.12.2020    |
| 233 01.1-04               | Liquefied gas on skin         | D        |         | 10.12.2020    |
|                           |                               |          |         |               |
| <b>Objective 1.2</b>      |                               |          |         |               |
|                           |                               |          |         |               |
| 233 01.2-01               | Breathing in gas              | C        |         | 10.12.2020    |
| 233 01.2-02               | Breathing in gas              | D        |         | 10.12.2020    |
| 233 01.2-03               | Breathing in gas              | A        |         | 10.12.2020    |
| 233 01.2-04               | Breathing in gas              | B        |         | 10.12.2020    |
| 233 01.2-05               | Breathing in gas              | B        |         | 10.12.2020    |
|                           |                               |          |         |               |
| <b>Objective 1.3</b>      |                               |          |         |               |
|                           |                               |          |         |               |
| 233 01.3-01               | Emergency assistance, general | A        |         | 10.12.2020    |
| 233 01.3-02               | Emergency assistance, general | C        |         | 10.12.2020    |
| 233 01.3-03               | Emergency assistance, general | C        |         | 10.12.2020    |
| 233 01.3-04               | Emergency assistance, general | D        |         | 10.12.2020    |
|                           |                               |          |         |               |
| <b>Objective 2.1</b>      |                               |          |         |               |
|                           |                               |          |         |               |
| 233 02.1-01               | Leak in a connection          | A        |         | 10.12.2020    |
| 233 02.1-02               | Leak in a connection          | B        |         | 10.12.2020    |
| 233 02.1-03               | Leak in a connection          | C        |         | 10.12.2020    |
|                           |                               |          |         |               |
| <b>Objective 2.2</b>      |                               |          |         |               |
|                           |                               |          |         |               |
| 233 02.2-01               | Fire in the engine room       | C        |         | 10.12.2020    |
| 233 02.2-02               | Fire in the engine room       | A        |         | 10.12.2020    |
| 233 02.2-03               | Fire in the engine room       | C        |         | 10.12.2020    |
|                           |                               |          |         |               |

| Number               | Source   | Response | Remarks | Dealt with on |
|----------------------|--|----------|---------|---------------|
| <b>Objective 2.3</b> |  |          |         |               |
|                      |  |          |         |               |
| 233 02.3-01          | Hazards that might arise in the vicinity of the vessel | B        |         | 10.12.2020    |
| 233 02.3-02          | Hazards that might arise in the vicinity of the vessel | A        |         | 10.12.2020    |
| 233 02.3-03          | Hazards that might arise in the vicinity of the vessel | B        |         | 20.09.2018    |
| 233 02.3-04          | Safety requirements, 7.2.4.16.17                       | A        |         | 30.09.2014    |
|                      |  |          |         |               |
| <b>Objective 2.4</b> |  |          |         |               |
|                      |  |          |         |               |
| 233 02.4-01          | Over-filling   | A        |         | 10.12.2020    |
| 233 02.4-02          | Over-filling   | A        |         | 10.12.2020    |
| 233 02.4-03          | Over-filling   | D        |         | 10.12.2020    |
|                      |  |          |         |               |
| <b>Objective 2.5</b> |  |          |         |               |
|                      |  |          |         |               |
| 233 02.5-01          | Polymerization   | C        |         | 10.12.2020    |
| 233 02.5-02          | Polymerization   | B        |         | 10.12.2020    |
| 233 02.5-03          | Polymerization   | D        |         | 10.12.2020    |

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