

### Warning



## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

SDS no : SDS 01520

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses : Industrial and professional use for chemical analysis, calibration, (routine) quality control, laboratory use, under controlled conditions.

Uses advised against : Consumer use.

Uses other than those listed above are not supported, contact your supplier for more information on other uses.

### 1.3. Details of the supplier of the safety data sheet

Air Liquide UK Ltd.  
Station Road  
Coleshill  
B46 1JY Birmingham  
United Kingdom  
[safety.aluk@airliquide.com](mailto:safety.aluk@airliquide.com)

### 1.4. Emergency telephone number

Emergency telephone number : 01675 462695 (Available 24/7)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Physical hazards : Gases under pressure : Compressed gas H280

### 2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS04

Signal word (CLP) : Warning

Hazard statements (CLP) : H280 - Contains gas under pressure; may explode if heated.

Precautionary statements (CLP) : P403 - Store in a well-ventilated place.

- Storage

### 2.3. Other hazards

Asphyxiant in high concentrations.  
Not classified as PBT or vPvB.  
The substance/mixture has no endocrine disrupting properties.

# Safety Data Sheet

≤200 ppm NO & ≤100 ppm SO<sub>2</sub> in Nitrogen

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
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## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

| Name            | Product identifier                                                                                  | %      | Classification according to Regulation (EC) No. 1272/2008 [CLP]<br>ATE, EUH-statements, M-Factors                             |
|-----------------|-----------------------------------------------------------------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------|
| Nitrogen        | CAS-No.: 7727-37-9<br>EC-No.: 231-783-9<br>EC Index-No.: ---<br>REACH-no: *1                        | 99.97  | Press. Gas (Comp.), H280                                                                                                      |
| Nitric oxide    | CAS-No.: 10102-43-9<br>EC-No.: 233-271-0<br>EC Index-No.: ---<br>REACH-no: 01-2120766630-54         | ≤ 0.02 | Ox. Gas 1, H270<br>Press. Gas (Comp.), H280<br>Skin Corr. 1B, H314<br>Eye Dam. 1, H318<br>Acute Tox. 1 (Inhalation:gas), H330 |
| Sulphur dioxide | CAS-No.: 7446-09-5<br>EC-No.: 231-195-2<br>EC Index-No.: 016-011-00-9<br>REACH-no: 01-2119485028-34 | ≤ 0.01 | Press. Gas (Liq.), H280<br>Skin Corr. 1B, H314<br>Eye Dam. 1, H318<br>Acute Tox. 3 (Inhalation:gas), H331                     |

| Name            | Product identifier                                                                                               | Specific concentration limits (%) |
|-----------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Nitric oxide    | CAS-No.: 10102-43-9<br>EC-No.: 233-271-0<br>EC Index-No.: ---<br>REACH registration No: 01-2120766630-54         | (0.5 ≤ C ≤ 100) STOT SE 3, H335   |
| Sulphur dioxide | CAS-No.: 7446-09-5<br>EC-No.: 231-195-2<br>EC Index-No.: 016-011-00-9<br>REACH registration No: 01-2119485028-34 | (1 ≤ C ≤ 100) STOT SE 3, H335     |

Full text of H- and EUH-statements: see section 16

Contains no other components or impurities which will influence the classification of the product.

\*1: Listed in Annex IV / V REACH, exempted from registration.

\*3: Registration not required: Substance manufactured or imported < 1t/y.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- Inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Perform cardiopulmonary resuscitation if breathing stopped.
- Skin contact : Adverse effects not expected from this product.
- Eye contact : Adverse effects not expected from this product.
- Ingestion : Ingestion is not considered a potential route of exposure.

### **4.2. Most important symptoms and effects, both acute and delayed**

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation.  
See section 11.

### **4.3. Indication of any immediate medical attention and special treatment needed**

None.

## **SECTION 5: Firefighting measures**

### **5.1. Extinguishing media**

- Suitable extinguishing media : Water spray or fog.  
Product does not burn, use fire control measures appropriate for the surrounding fire.
- Unsuitable extinguishing media : Do not use water jet to extinguish.

### **5.2. Special hazards arising from the substance or mixture**

- Specific hazards : Exposure to fire may cause containers to rupture/explode.
- Hazardous combustion products : Nitric oxide/nitrogen dioxide. Sulphur dioxide.

### **5.3. Advice for firefighters**

- Specific methods : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.  
If possible, stop flow of product.  
Use water spray or fog to knock down fire fumes if possible.  
Move containers away from the fire area if this can be done without risk.
- Special protective equipment for fire fighters : In confined space use self-contained breathing apparatus.  
Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.  
Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.  
Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters.

## **SECTION 6: Accidental release measures**

### **6.1. Personal precautions, protective equipment and emergency procedures**

- For non-emergency personnel : Act in accordance with local emergency plan.  
Try to stop release.  
Evacuate area.  
Ensure adequate air ventilation.  
Stay upwind.  
See section 8 of the SDS for more information on personal protective equipment.
- For emergency responders : Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.  
Oxygen detectors should be used when asphyxiating gases may be released.  
See section 5.3 of the SDS for more information.

### **6.2. Environmental precautions**

Try to stop release.

### **6.3. Methods and material for containment and cleaning up**

Ventilate area.

### **6.4. Reference to other sections**

See also sections 8 and 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Safe use of the product

- : Do not breathe gas.
- Avoid release of product into atmosphere.
- The product must be handled in accordance with good industrial hygiene and safety procedures.
- Only experienced and properly instructed persons should handle gases under pressure.
- Consider pressure relief device(s) in gas installations.
- Ensure the complete gas system was (or is regularly) checked for leaks before use.
- Do not smoke while handling product.
- Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
- Avoid suck back of water, acid and alkalis.

Safe handling of the gas receptacle

- : Refer to supplier's container handling instructions.
- Do not allow backfeed into the container.
- Protect containers from physical damage; do not drag, roll, slide or drop.
- When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders.
- Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use.
- If user experiences any difficulty operating valve discontinue use and contact supplier.
- Never attempt to repair or modify container valves or safety relief devices.
- Damaged valves should be reported immediately to the supplier.
- Keep container valve outlets clean and free from contaminants particularly oil and water.
- Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.
- Close container valve after each use and when empty, even if still connected to equipment.
- Never attempt to transfer gases from one cylinder/container to another.
- Never use direct flame or electrical heating devices to raise the pressure of a container.
- Do not remove or deface labels provided by the supplier for the identification of the content of the container.
- Suck back of water into the container must be prevented.
- Open valve slowly to avoid pressure shock.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Observe all regulations and local requirements regarding storage of containers.
- Containers should not be stored in conditions likely to encourage corrosion.
- Container valve guards or caps should be in place.
- Containers should be stored in the vertical position and properly secured to prevent them from falling over.
- Stored containers should be periodically checked for general condition and leakage.
- Keep container below 50°C in a well ventilated place.
- Store containers in location free from fire risk and away from sources of heat and ignition.
- Keep away from combustible materials.

#### 7.3. Specific end use(s)

None.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

**Nitric oxide (10102-43-9)**

**EU - Indicative Occupational Exposure Limit (IOEL)**

Local name

Nitrogen monoxide

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
Reference number: SDS 01520

|                                                |                                                                                                                                                                                                                                                                          |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IOEL TWA                                       | 2.5 mg/m <sup>3</sup><br>2 ppm                                                                                                                                                                                                                                           |
| Regulatory reference                           | COMMISSION DIRECTIVE (EU) 2017/164                                                                                                                                                                                                                                       |
| <b>Albania - Occupational Exposure Limits</b>  |                                                                                                                                                                                                                                                                          |
| Local name                                     | Monoksid azoti                                                                                                                                                                                                                                                           |
| OEL TWA                                        | 30 mg/m <sup>3</sup><br>25 ppm                                                                                                                                                                                                                                           |
| Regulatory reference                           | VENDIM Nr. 522, datë 6.8.2014 PËR MIRATIMIN E RREGULLORES "PËR MBROJTJEN E SIGURISË DHE SHËNDETIT TË PUNËMARRËSVE NGA RISQET E LIDHURA ME AGJENTËT KIMIKË NË PUNË"                                                                                                       |
| <b>Austria - Occupational Exposure Limits</b>  |                                                                                                                                                                                                                                                                          |
| Local name                                     | Stickstoffmonoxid                                                                                                                                                                                                                                                        |
| MAK (mg/m <sup>3</sup> )                       | 30 mg/m <sup>3</sup> (gilt für Arbeiten im Tunnel- und Untertagebau bis 21.8.2023)<br>2.5 mg/m <sup>3</sup>                                                                                                                                                              |
| MAK (OEL TWA)                                  | 25 ppm (gilt für Arbeiten im Tunnel- und Untertagebau bis 21.8.2023)<br>2 ppm                                                                                                                                                                                            |
| Regulatory reference                           | BGBI. II Nr. 156/2021                                                                                                                                                                                                                                                    |
| <b>Belgium - Occupational Exposure Limits</b>  |                                                                                                                                                                                                                                                                          |
| Local name                                     | Azote (monoxyde d') # Stikstofmonoxide                                                                                                                                                                                                                                   |
| OEL TWA                                        | 2.5 mg/m <sup>3</sup><br>2 ppm                                                                                                                                                                                                                                           |
| Regulatory reference                           | Koninklijk besluit/Arrêté royal 11/05/2021                                                                                                                                                                                                                               |
| <b>Bulgaria - Occupational Exposure Limits</b> |                                                                                                                                                                                                                                                                          |
| Local name                                     | Азотен монооксид                                                                                                                                                                                                                                                         |
| OEL TWA                                        | 2.5 mg/m <sup>3</sup> За мините с подземен добив и прокарването на подземни тунели граничните стойности влизат в сила от 21 август 2023 г.<br>2 ppm За мините с подземен добив и прокарването на подземни тунели граничните стойности влизат в сила от 21 август 2023 г. |
| Remark                                         | • (Химични агенти, за които са определени гранични стойности във въздуха на работната среда за Европейската общност)                                                                                                                                                     |
| Regulatory reference                           | Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)                                                                                        |
| <b>Croatia - Occupational Exposure Limits</b>  |                                                                                                                                                                                                                                                                          |
| Local name                                     | Dušikov monoksid                                                                                                                                                                                                                                                         |
| GVI (OEL TWA)                                  | 30 mg/m <sup>3</sup> za djelatnosti podzemnog rudarenja i bušenja tunela, do 21. 8. 2023.<br>2.5 mg/m <sup>3</sup><br>25 ppm za djelatnosti podzemnog rudarenja i bušenja tunela, do 21. 8. 2023.<br>2 ppm                                                               |
| Remark                                         | Direktiva: 2017/164/EU                                                                                                                                                                                                                                                   |

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
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|                                                      |                                                                                                                                                                                                                                            |
|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regulatory reference                                 | Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 1/2021)                                                                               |
| <b>Cyprus - Occupational Exposure Limits</b>         |                                                                                                                                                                                                                                            |
| Local name                                           | Μονοξειδίο του αζώτου                                                                                                                                                                                                                      |
| OEL STEL                                             | 2.5 mg/m <sup>3</sup><br>2 ppm                                                                                                                                                                                                             |
| Regulatory reference                                 | Κανονισμοί του 2019 (Κ.Δ.Π. 16/2019)                                                                                                                                                                                                       |
| <b>Czech Republic - Occupational Exposure Limits</b> |                                                                                                                                                                                                                                            |
| Local name                                           | Oxid dusnatý                                                                                                                                                                                                                               |
| PEL (OEL TWA)                                        | 2.5 mg/m <sup>3</sup><br>2 ppm                                                                                                                                                                                                             |
| NPK-P (OEL C)                                        | 5 mg/m <sup>3</sup><br>4 ppm                                                                                                                                                                                                               |
| Remark                                               | I - dráždí sliznice (oči, dýchací cesty), respektive kůže.                                                                                                                                                                                 |
| Regulatory reference                                 | Nařízení vlády č. 361/2007 Sb. (Předpis 195/2021 Sb.)                                                                                                                                                                                      |
| <b>Denmark - Occupational Exposure Limits</b>        |                                                                                                                                                                                                                                            |
| Local name                                           | Nitrogenoxid (Nitrøse gasser)                                                                                                                                                                                                              |
| OEL TWA                                              | 2.5 mg/m <sup>3</sup><br>30 mg/m <sup>3</sup> I minedrift og tunnelbyggeri gælder frem til og med 21. august 2023 for Nitrogenoxid<br>2 ppm<br>25 ppm I minedrift og tunnelbyggeri gælder frem til og med 21. august 2023 for Nitrogenoxid |
| Remark                                               | E (betyder, at stoffet har en EF-grænseværdi)                                                                                                                                                                                              |
| Regulatory reference                                 | BEK nr 1054 af 28/06/2022                                                                                                                                                                                                                  |
| <b>Estonia - Occupational Exposure Limits</b>        |                                                                                                                                                                                                                                            |
| Local name                                           | Lämmastikmonooksiid                                                                                                                                                                                                                        |
| OEL TWA                                              | 2.5 mg/m <sup>3</sup><br>30 mg/m <sup>3</sup> Allmaakaevandustes (Kehtiv kuni 21.08.2023)<br>25 ppm Allmaakaevandustes (Kehtiv kuni 21.08.2023)<br>2 ppm                                                                                   |
| OEL STEL                                             | 60 mg/m <sup>3</sup> Allmaakaevandustes (Kehtiv kuni 21.08.2023)<br>50 ppm Allmaakaevandustes (Kehtiv kuni 21.08.2023)                                                                                                                     |
| Regulatory reference                                 | Vabariigi Valitsuse 20. märtsi 2001. a määruse nr 105 (RT I, 15.05.2021, 1)                                                                                                                                                                |
| <b>Finland - Occupational Exposure Limits</b>        |                                                                                                                                                                                                                                            |
| Local name                                           | Typpioksiidi                                                                                                                                                                                                                               |
| HTP (OEL TWA)                                        | 12.5 mg/m <sup>3</sup> Poikkeus koskien maanalaista kaivos- ja tunnelityötä<br>2.5 mg/m <sup>3</sup>                                                                                                                                       |

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|                                                          |                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                          | 10 ppm Poikkeus koskien maanalaista kaivos- ja tunnelityötä<br>2 ppm                                                                                                                                                                                                             |
| Regulatory reference                                     | HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)                                                                                                                                                                                                                                  |
| <b>France - Occupational Exposure Limits</b>             |                                                                                                                                                                                                                                                                                  |
| Local name                                               | Monoxyde d'azote                                                                                                                                                                                                                                                                 |
| VME (OEL TWA)                                            | 2.5 mg/m <sup>3</sup><br>2 ppm                                                                                                                                                                                                                                                   |
| Remark                                                   | Valeurs réglementaires contraignantes                                                                                                                                                                                                                                            |
| Regulatory reference                                     | Article R4412-149 du Code du travail (réf.: INRS ED 984, 2016; Décret n° 2019-1487; Décret n° 2020-1546; Décret n° 2021-434; Décret n° 2021-1849)                                                                                                                                |
| <b>Germany - Occupational Exposure Limits (TRGS 900)</b> |                                                                                                                                                                                                                                                                                  |
| Local name                                               | Stickstoffmonoxid                                                                                                                                                                                                                                                                |
| AGW (OEL TWA)                                            | 2.5 mg/m <sup>3</sup><br>2 ppm                                                                                                                                                                                                                                                   |
| Peak exposure limitation factor                          | 2(II)                                                                                                                                                                                                                                                                            |
| Remark                                                   | EU - Europäische Union (Von der EU wurde ein Luftgrenzwert festgelegt: Abweichungen bei Wert und Spitzenbegrenzung sind möglich); AGS - Ausschuss für Gefahrstoffe; 22b - Für den Bereich Bergbau gilt bis 21. August 2023 ein Wert in Höhe von 30 mg/m <sup>3</sup> bzw. 25 ppm |
| Regulatory reference                                     | TRGS900                                                                                                                                                                                                                                                                          |
| <b>Gibraltar - Occupational Exposure Limits</b>          |                                                                                                                                                                                                                                                                                  |
| Local name                                               | Nitrogen monoxide                                                                                                                                                                                                                                                                |
| OEL TWA                                                  | 30 mg/m <sup>3</sup><br>25 ppm                                                                                                                                                                                                                                                   |
| Regulatory reference                                     | Factories (Control of Chemical Agents at Work) Regulations 2003 (LN. 2018/181)                                                                                                                                                                                                   |
| <b>Greece - Occupational Exposure Limits</b>             |                                                                                                                                                                                                                                                                                  |
| Local name                                               | Μονοξείδιο του αζώτου                                                                                                                                                                                                                                                            |
| OEL TWA                                                  | 2.5 mg/m <sup>3</sup><br>2 ppm                                                                                                                                                                                                                                                   |
| Regulatory reference                                     | Π.Δ. 82/2018 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους                                                                                                                                          |
| <b>Hungary - Occupational Exposure Limits</b>            |                                                                                                                                                                                                                                                                                  |
| Local name                                               | NITROGÉN-MONOXID                                                                                                                                                                                                                                                                 |
| AK (OEL TWA)                                             | 2.5 mg/m <sup>3</sup><br>30 mg/m <sup>3</sup> A földalatti bányászat és az alagútfrás terén                                                                                                                                                                                      |
| Remark                                                   | EU4 (2017/164 EU irányelvben közölt érték, EU91 (91/322/EGK irányelvben közölt érték); R (Azok az anyagok, amelyek egészségkárosító hatása RÖVID expozíció hatására jelentkezik)                                                                                                 |

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|                                                  |                                                                                                                                                                                                                              |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regulatory reference                             | 5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről                                                                                             |
| <b>Ireland - Occupational Exposure Limits</b>    |                                                                                                                                                                                                                              |
| Local name                                       | Nitric oxide [Nitrogen monoxide]                                                                                                                                                                                             |
| OEL TWA                                          | 30 mg/m <sup>3</sup> apply to underground mining and tunnelling sector only until 21st August 2023<br>2.5 mg/m <sup>3</sup><br>25 ppm apply to underground mining and tunnelling sector only until 21st August 2023<br>2 ppm |
| OEL STEL                                         | 45 mg/m <sup>3</sup> apply to underground mining and tunnelling sector only until 21st August 2023<br>35 ppm apply to underground mining and tunnelling sector only until 21st August 2023                                   |
| Remark                                           | IOELV (Indicative Occupational Exposure Limit Values)                                                                                                                                                                        |
| Regulatory reference                             | Chemical Agents Code of Practice 2021                                                                                                                                                                                        |
| <b>Italy - Occupational Exposure Limits</b>      |                                                                                                                                                                                                                              |
| Local name                                       | Monossido di azoto                                                                                                                                                                                                           |
| OEL TWA                                          | 2.5 mg/m <sup>3</sup>                                                                                                                                                                                                        |
| OEL STEL                                         | 2 mg/m <sup>3</sup>                                                                                                                                                                                                          |
| Regulatory reference                             | Allegato XXXVIII del D.Lgs. 9 aprile 2008, n. 81 e s.m.i.                                                                                                                                                                    |
| <b>Latvia - Occupational Exposure Limits</b>     |                                                                                                                                                                                                                              |
| Local name                                       | Slāpekļa monoksīds                                                                                                                                                                                                           |
| OEL TWA                                          | 2.5 mg/m <sup>3</sup><br>2 ppm                                                                                                                                                                                               |
| Regulatory reference                             | Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2011. gada 1. februārī noteikumiem Nr. 92)                                                                                           |
| <b>Lithuania - Occupational Exposure Limits</b>  |                                                                                                                                                                                                                              |
| Local name                                       | Azoto monoksidas                                                                                                                                                                                                             |
| IPRV (OEL TWA)                                   | 2.5 mg/m <sup>3</sup><br>2 ppm                                                                                                                                                                                               |
| Regulatory reference                             | LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)                                                                                                                                                            |
| <b>Luxembourg - Occupational Exposure Limits</b> |                                                                                                                                                                                                                              |
| Local name                                       | Monoxyde d'azote                                                                                                                                                                                                             |
| OEL TWA                                          | 2.5 mg/m <sup>3</sup><br>2 ppm                                                                                                                                                                                               |
| Remark                                           | Dans les mines souterraines et tunnels en percement cette valeur limite est applicable à partir du 22 août 2023                                                                                                              |

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
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|                                                   |                                                                                                                                                                                                                                                |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regulatory reference                              | Mémorial A N° 226 de 2021 concernant la protection de la sécurité et de la santé des salariés contre les risques liés à des agents chimiques sur le lieu de travail                                                                            |
| <b>Malta - Occupational Exposure Limits</b>       |                                                                                                                                                                                                                                                |
| Local name                                        | Nitrogen monoxide                                                                                                                                                                                                                              |
| OEL TWA                                           | 2.5 mg/m <sup>3</sup><br>2 ppm                                                                                                                                                                                                                 |
| Regulatory reference                              | S.L.424.24 - Chemical Agents at Work Regulations (L.N.356 of 2021)                                                                                                                                                                             |
| <b>Netherlands - Occupational Exposure Limits</b> |                                                                                                                                                                                                                                                |
| Local name                                        | Stikstofmonoxide                                                                                                                                                                                                                               |
| TGG-8u (OEL TWA)                                  | 2.5 mg/m <sup>3</sup><br>2 ppm                                                                                                                                                                                                                 |
| Regulatory reference                              | Arbeidsomstandighedenregeling 2023                                                                                                                                                                                                             |
| <b>Poland - Occupational Exposure Limits</b>      |                                                                                                                                                                                                                                                |
| Local name                                        | Tlenek azotu                                                                                                                                                                                                                                   |
| NDS (OEL TWA)                                     | 2.5 mg/m <sup>3</sup>                                                                                                                                                                                                                          |
| Regulatory reference                              | Dz. U. 2018 poz. 1286                                                                                                                                                                                                                          |
| <b>Portugal - Occupational Exposure Limits</b>    |                                                                                                                                                                                                                                                |
| Local name                                        | Óxido nítrico                                                                                                                                                                                                                                  |
| OEL TWA                                           | 25 ppm                                                                                                                                                                                                                                         |
| Remark                                            | IBEM (Índice biológico de exposição)                                                                                                                                                                                                           |
| Regulatory reference                              | Norma Portuguesa NP 1796:2014                                                                                                                                                                                                                  |
| <b>Romania - Occupational Exposure Limits</b>     |                                                                                                                                                                                                                                                |
| Local name                                        | Monoxid de azot                                                                                                                                                                                                                                |
| OEL TWA                                           | 30 mg/m <sup>3</sup> Exploatărilor miniere subterane și al șantierelor de săpare a tunelurilor și puțurilor<br>2.5 mg/m <sup>3</sup><br>24 ppm Exploatărilor miniere subterane și al șantierelor de săpare a tunelurilor și puțurilor<br>2 ppm |
| Remark                                            | Începând cu data intrării în vigoare a prezentei hotărâri și până la 21 august 2023 se instituie o perioadă de tranziție în cazul exploatărilor miniere subterane și al șantierelor de săpare a tunelurilor și puțurilor                       |
| Regulatory reference                              | Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 53/2021)                                                                                                                                                                                    |
| <b>Serbia - Occupational Exposure Limits</b>      |                                                                                                                                                                                                                                                |
| Local name                                        | азот моноксид                                                                                                                                                                                                                                  |
| OEL TWA                                           | 3 mg/m <sup>3</sup><br>2 ppm                                                                                                                                                                                                                   |

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≤200 ppm NO & ≤100 ppm SO<sub>2</sub> in Nitrogen

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|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remark                                         | ЕУ**** – напомена да се ради о хемијским материјама за које су утврђене индикативне граничне вредности изложености према Директиви 2017/164/ЕУ (четврта листа)                                                                                                                                                                                                                                                                   |
| Regulatory reference                           | ПРАВИЛНИК о превентивним мерама за безбедан и здрав рад при излагању хемијским материјама („Службени гласник РС”, бр. 106/09, 117/17 и 107/21)                                                                                                                                                                                                                                                                                   |
| <b>Slovakia - Occupational Exposure Limits</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Local name                                     | Oxid dusnatý (NO)                                                                                                                                                                                                                                                                                                                                                                                                                |
| NPHV (OEL TWA)                                 | 30 mg/m <sup>3</sup> NPEL majú prechodné obdobie do 21. augusta 2023, ktoré sa týka expozície zamestnancov pri podzemnej ťažbe a razení tunelov<br>2.5 mg/m <sup>3</sup><br>25 ppm NPEL majú prechodné obdobie do 21. augusta 2023, ktoré sa týka expozície zamestnancov pri podzemnej ťažbe a razení tunelov<br>2 ppm                                                                                                           |
| Regulatory reference                           | Nariadenie vlády č. 355/2006 Z. z. (236/2020 Z. z.)                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Slovenia - Occupational Exposure Limits</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Local name                                     | dušikov monoksid                                                                                                                                                                                                                                                                                                                                                                                                                 |
| OEL TWA                                        | 2.5 mg/m <sup>3</sup><br>2 ppm                                                                                                                                                                                                                                                                                                                                                                                                   |
| OEL STEL                                       | 5 mg/m <sup>3</sup><br>4 ppm                                                                                                                                                                                                                                                                                                                                                                                                     |
| Remark                                         | EU                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Regulatory reference                           | Uradni list RS, št. 72/2021 z dne 11.5.2021                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Spain - Occupational Exposure Limits</b>    |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Local name                                     | Monóxido de nitrógeno                                                                                                                                                                                                                                                                                                                                                                                                            |
| VLA-ED (OEL TWA)                               | 2.5 mg/m <sup>3</sup><br>31 mg/m <sup>3</sup> Para este agente existe un periodo transitorio, que terminará, a más tardar, el 21 de agosto de 2023, para los sectores de la minería subterránea y la construcción de túneles.<br>2 ppm<br>25 ppm Para este agente existe un periodo transitorio, que terminará, a más tardar, el 21 de agosto de 2023, para los sectores de la minería subterránea y la construcción de túneles. |
| Remark                                         | VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo).                                                                                                                                                                                                                                                                                                                                        |
| Regulatory reference                           | Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT                                                                                                                                                                                                                                                                                                                                                    |
| <b>Sweden - Occupational Exposure Limits</b>   |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Local name                                     | Kvävemonoxid                                                                                                                                                                                                                                                                                                                                                                                                                     |
| NGV (OEL TWA)                                  | 2.5 mg/m <sup>3</sup><br>30 mg/m <sup>3</sup> När det gäller underjord- eller tunnelarbete<br>2 ppm<br>25 ppm När det gäller underjord- eller tunnelarbete                                                                                                                                                                                                                                                                       |

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≤200 ppm NO & ≤100 ppm SO<sub>2</sub> in Nitrogen

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|                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KGV (OEL STEL)                                        | 60 mg/m <sup>3</sup> När det gäller underjord- eller tunnelarbete<br>50 ppm När det gäller underjord- eller tunnelarbete                                                                                                                                                                                                                                                                                                                                                                     |
| Remark                                                | V (Vägledande korttidsgränsvärde ska användas som ett rekommenderat högsta värde som inte bör överskridas)                                                                                                                                                                                                                                                                                                                                                                                   |
| Regulatory reference                                  | Hygieniska gränsvärden (AFS 2018:1)                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>United Kingdom - Occupational Exposure Limits</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Local name                                            | Nitrogen monoxide                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| WEL TWA (OEL TWA)                                     | 2.5 mg/m <sup>3</sup><br>30 mg/m <sup>3</sup> Limit applicable to underground mining & tunnelling industries ONLY until 21/8/23<br>2 ppm<br>25 ppm Limit applicable to underground mining & tunnelling industries ONLY until 21/8/23                                                                                                                                                                                                                                                         |
| Regulatory reference                                  | EH40/2005 (Fourth edition, 2020). HSE                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Iceland - Occupational Exposure Limits</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Local name                                            | Köfnunarefniseinoxíð                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| OEL TWA                                               | 2.5 mg/m <sup>3</sup><br>2 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Regulatory reference                                  | Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 1069/2018)                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Norway - Occupational Exposure Limits</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Local name                                            | Nitrogenmonoksid (Nitrogenoksid)                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Grenseverdi (OEL TWA)                                 | 2.5 mg/m <sup>3</sup><br>30 mg/m <sup>3</sup> For bransjene gruvedrift under jord og tunnel-virksomhet gjelder følgende grenseverdi for nitrogenmonoksid frem til 21. august 2023<br>2 ppm<br>25 ppm For bransjene gruvedrift under jord og tunnel-virksomhet gjelder følgende grenseverdi for nitrogenmonoksid frem til 21. august 2023                                                                                                                                                     |
| Remark                                                | E: EU har en veiledende grenseverdi og/eller anmerkning for stoffet; 14) Enkelte bedrifter vil av teknisk-økonomiske årsaker ikke kunne overholde grenseverdiene. Det er disse bedriftenes ansvar å dokumentere et forsvarlig arbeidsmiljø. Det forutsettes at bedriften(e) har en plan for reduksjon av eksponering og at man kan vise lavere verdier over tid. Arbeidstilsynet, ansattrepresentanter og verneombud skal konsulteres og informeres om årlige planer og oppnådde resultater. |
| Regulatory reference                                  | FOR-2021-06-28-2248                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>North Macedonia - Occupational Exposure Limits</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Local name                                            | азотен моноксид                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| OEL TWA                                               | 30 mg/m <sup>3</sup><br>25 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Remark                                                | (EU) European Union – гранична вредност, определена на ниво на Европската унија                                                                                                                                                                                                                                                                                                                                                                                                              |

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|                                                   |                                                                                                                                                                                            |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regulatory reference                              | Правилник за минималните барања за безбедност и здравје при работа на вработени од ризици поврзани со изложување на хемиски супстанции („Службен весник на Република Македонија” бр.46/10) |
| <b>Switzerland - Occupational Exposure Limits</b> |                                                                                                                                                                                            |
| Local name                                        | Monoxyde d'azote / Stickstoffmonoxid                                                                                                                                                       |
| MAK (OEL TWA)                                     | 6 mg/m <sup>3</sup>                                                                                                                                                                        |
|                                                   | 5 ppm                                                                                                                                                                                      |
| Critical toxicity                                 | Poumons / Lunge                                                                                                                                                                            |
| Notation                                          | P / P                                                                                                                                                                                      |
| Remark                                            | NIOSH, DFG                                                                                                                                                                                 |
| Regulatory reference                              | www.suva.ch, 01.01.2023                                                                                                                                                                    |
| <b>USA - ACGIH - Occupational Exposure Limits</b> |                                                                                                                                                                                            |
| Local name                                        | Nitric oxide                                                                                                                                                                               |
| ACGIH OEL TWA                                     | 25 ppm                                                                                                                                                                                     |
| Remark (ACGIH)                                    | TLV® Basis: Hypoxia/cyanosis; nitrosyl-Hb form; URT irr. Notations: BEIM                                                                                                                   |
| Regulatory reference                              | ACGIH 2023                                                                                                                                                                                 |

|                                                           |                                        |
|-----------------------------------------------------------|----------------------------------------|
| <b>Sulphur dioxide (7446-09-5)</b>                        |                                        |
| <b>EU - Indicative Occupational Exposure Limit (IOEL)</b> |                                        |
| Local name                                                | Sulphur dioxide                        |
| IOEL TWA                                                  | 1.3 mg/m <sup>3</sup>                  |
|                                                           | 0.5 ppm                                |
| IOEL STEL                                                 | 2.7 mg/m <sup>3</sup>                  |
|                                                           | 1 ppm                                  |
| Regulatory reference                                      | COMMISSION DIRECTIVE (EU) 2017/164     |
| <b>Austria - Occupational Exposure Limits</b>             |                                        |
| Local name                                                | Schwefeldioxid                         |
| MAK (mg/m <sup>3</sup> )                                  | 1.3 mg/m <sup>3</sup>                  |
| MAK (OEL TWA)                                             | 0.5 ppm                                |
| MAK (OEL STEL)                                            | 2.7 mg/m <sup>3</sup> (4x 15(Miw) min) |
|                                                           | 1 ppm (4x 15(Miw) min)                 |
| Regulatory reference                                      | BGBI. II Nr. 156/2021                  |
| <b>Belgium - Occupational Exposure Limits</b>             |                                        |
| Local name                                                | Soufre (dioxyde de) # Zwaveldioxide    |
| OEL TWA                                                   | 1.3 mg/m <sup>3</sup>                  |
|                                                           | 0.5 ppm                                |
| OEL STEL                                                  | 2.7 mg/m <sup>3</sup>                  |

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|                                                      |                                                                                                                                                                                   |
|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                      | 1 ppm                                                                                                                                                                             |
| Regulatory reference                                 | Koninklijk besluit/Arrêté royal 11/05/2021                                                                                                                                        |
| <b>Bulgaria - Occupational Exposure Limits</b>       |                                                                                                                                                                                   |
| Local name                                           | Серен диоксид                                                                                                                                                                     |
| OEL TWA                                              | 1.3 mg/m <sup>3</sup>                                                                                                                                                             |
|                                                      | 0.5 ppm                                                                                                                                                                           |
| OEL STEL                                             | 2.7 mg/m <sup>3</sup>                                                                                                                                                             |
|                                                      | 1 ppm                                                                                                                                                                             |
| Remark                                               | • (Химични агенти, за които са определени гранични стойности във въздуха на работната среда за Европейската общност)                                                              |
| Regulatory reference                                 | Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.) |
| <b>Croatia - Occupational Exposure Limits</b>        |                                                                                                                                                                                   |
| Local name                                           | Sumporov dioksid                                                                                                                                                                  |
| GVI (OEL TWA)                                        | 1.3 mg/m <sup>3</sup>                                                                                                                                                             |
|                                                      | 0.5 ppm                                                                                                                                                                           |
| KGVI (OEL STEL)                                      | 2.7 mg/m <sup>3</sup>                                                                                                                                                             |
|                                                      | 1 ppm                                                                                                                                                                             |
| Remark                                               | Direktiva: 2017/164/EU                                                                                                                                                            |
| Regulatory reference                                 | Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 1/2021)                      |
| <b>Cyprus - Occupational Exposure Limits</b>         |                                                                                                                                                                                   |
| Local name                                           | Διοξειδίο του θείου                                                                                                                                                               |
| OEL TWA                                              | 1.3 mg/m <sup>3</sup>                                                                                                                                                             |
|                                                      | 0.5 ppm                                                                                                                                                                           |
| OEL STEL                                             | 2.7 mg/m <sup>3</sup>                                                                                                                                                             |
|                                                      | 1 ppm                                                                                                                                                                             |
| Regulatory reference                                 | Κανονισμοί του 2019 (Κ.Δ.Π. 16/2019)                                                                                                                                              |
| <b>Czech Republic - Occupational Exposure Limits</b> |                                                                                                                                                                                   |
| Local name                                           | Oxid siřičitý                                                                                                                                                                     |
| PEL (OEL TWA)                                        | 1.3 mg/m <sup>3</sup>                                                                                                                                                             |
|                                                      | 0.49 ppm                                                                                                                                                                          |
| NPK-P (OEL C)                                        | 2.7 mg/m <sup>3</sup>                                                                                                                                                             |
|                                                      | 1 ppm                                                                                                                                                                             |
| Remark                                               | I - dráždí sliznice (oči, dýchací cesty), respektive kůži.                                                                                                                        |
| Regulatory reference                                 | Nařízení vlády č. 361/2007 Sb. (Předpis 195/2021 Sb.)                                                                                                                             |

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| Denmark - Occupational Exposure Limits            |                                                                             |
|---------------------------------------------------|-----------------------------------------------------------------------------|
| Local name                                        | Svovldioxid                                                                 |
| OEL TWA                                           | 1.3 mg/m <sup>3</sup>                                                       |
|                                                   | 0.5 ppm                                                                     |
| OEL STEL                                          | 2.7 mg/m <sup>3</sup>                                                       |
|                                                   | 1 ppm                                                                       |
| Remark                                            | E (betyder, at stoffet har en EF-grænseværdi)                               |
| Regulatory reference                              | BEK nr 1054 af 28/06/2022                                                   |
| Estonia - Occupational Exposure Limits            |                                                                             |
| Local name                                        | Vääveldioksiid                                                              |
| OEL TWA                                           | 1.3 mg/m <sup>3</sup>                                                       |
|                                                   | 0.5 ppm                                                                     |
| OEL STEL                                          | 2.7 mg/m <sup>3</sup>                                                       |
|                                                   | 1 ppm                                                                       |
| Regulatory reference                              | Vabariigi Valitsuse 20. märtsi 2001. a määruse nr 105 (RT I, 15.05.2021, 1) |
| Finland - Occupational Exposure Limits            |                                                                             |
| Local name                                        | Rikkidioksidi                                                               |
| HTP (OEL TWA)                                     | 1.3 mg/m <sup>3</sup>                                                       |
|                                                   | 0.5 ppm                                                                     |
| HTP (OEL STEL)                                    | 2.7 mg/m <sup>3</sup>                                                       |
|                                                   | 1 ppm                                                                       |
| Regulatory reference                              | HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)                             |
| France - Occupational Exposure Limits             |                                                                             |
| Local name                                        | Soufre (dioxyde de) (Anhydride sulfureux)                                   |
| VME (OEL TWA)                                     | 1.3 mg/m <sup>3</sup>                                                       |
|                                                   | 0.5 ppm                                                                     |
| VLE (OEL C/STEL)                                  | 2.7 mg/m <sup>3</sup>                                                       |
|                                                   | 1 ppm                                                                       |
| Remark                                            | Valeurs réglementaires indicatives                                          |
| Regulatory reference                              | Circulaire du Ministère du travail (réf.: Arrête du 27 septembre 2019)      |
| Germany - Occupational Exposure Limits (TRGS 900) |                                                                             |
| Local name                                        | Schwefeldioxid                                                              |
| AGW (OEL TWA)                                     | 2.7 mg/m <sup>3</sup>                                                       |
|                                                   | 1 ppm                                                                       |
| Peak exposure limitation factor                   | 1(I)                                                                        |

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|                                                 |                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remark                                          | AGS - Ausschuss für Gefahrstoffe; Y - Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden; EU - Europäische Union (Von der EU wurde ein Luftgrenzwert festgelegt: Abweichungen bei Wert und Spitzenbegrenzung sind möglich) |
| Regulatory reference                            | TRGS900                                                                                                                                                                                                                                                                                                                      |
| <b>Gibraltar - Occupational Exposure Limits</b> |                                                                                                                                                                                                                                                                                                                              |
| Local name                                      | Sulphur dioxide                                                                                                                                                                                                                                                                                                              |
| OEL TWA                                         | 1.3 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                        |
|                                                 | 0.5 ppm                                                                                                                                                                                                                                                                                                                      |
| OEL STEL                                        | 2.7 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                        |
|                                                 | 1 ppm                                                                                                                                                                                                                                                                                                                        |
| Regulatory reference                            | Factories (Control of Chemical Agents at Work) Regulations 2003 (LN. 2018/181)                                                                                                                                                                                                                                               |
| <b>Greece - Occupational Exposure Limits</b>    |                                                                                                                                                                                                                                                                                                                              |
| Local name                                      | Διοξείδιο του θείου                                                                                                                                                                                                                                                                                                          |
| OEL TWA                                         | 1.3 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                        |
|                                                 | 0.5 ppm                                                                                                                                                                                                                                                                                                                      |
| OEL STEL                                        | 2.7 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                        |
|                                                 | 1 ppm                                                                                                                                                                                                                                                                                                                        |
| Regulatory reference                            | Π.Δ. 82/2018 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους                                                                                                                                                                                      |
| <b>Hungary - Occupational Exposure Limits</b>   |                                                                                                                                                                                                                                                                                                                              |
| Local name                                      | KÉN-DIOXID                                                                                                                                                                                                                                                                                                                   |
| AK (OEL TWA)                                    | 1.3 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                        |
| CK (OEL STEL)                                   | 2.7 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                        |
| Remark                                          | m (maró hatású anyag, amely felmarja a bőrt, nyálkahártyát, szemet vagy mindhármat); EU4 (2017/164 EU irányelvben közölt érték); N (Irritáló anyagok, egyszerű fojtógázok, csekély egészségkárosító hatással bíró anyagok)                                                                                                   |
| Regulatory reference                            | 5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről                                                                                                                                                                                             |
| <b>Ireland - Occupational Exposure Limits</b>   |                                                                                                                                                                                                                                                                                                                              |
| Local name                                      | Sulphur dioxide                                                                                                                                                                                                                                                                                                              |
| OEL TWA                                         | 1.3 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                        |
|                                                 | 0.5 ppm                                                                                                                                                                                                                                                                                                                      |
| OEL STEL                                        | 2.6 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                        |
|                                                 | 1 ppm                                                                                                                                                                                                                                                                                                                        |
| Remark                                          | IOELV (Indicative Occupational Exposure Limit Values)                                                                                                                                                                                                                                                                        |
| Regulatory reference                            | Chemical Agents Code of Practice 2021                                                                                                                                                                                                                                                                                        |

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| Italy - Occupational Exposure Limits      |                                                                                                                                                                     |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Local name                                | Anidride solforosa                                                                                                                                                  |
| OEL TWA                                   | 1.3 mg/m <sup>3</sup>                                                                                                                                               |
|                                           | 0.5 ppm                                                                                                                                                             |
| OEL STEL                                  | 2.7 mg/m <sup>3</sup>                                                                                                                                               |
|                                           | 1 ppm                                                                                                                                                               |
| Regulatory reference                      | Allegato XXXVIII del D.Lgs. 9 aprile 2008, n. 81 e s.m.i.                                                                                                           |
| Latvia - Occupational Exposure Limits     |                                                                                                                                                                     |
| Local name                                | Sēra (IV) oksīds (sēra dioksīds)                                                                                                                                    |
| OEL TWA                                   | 1.3 mg/m <sup>3</sup>                                                                                                                                               |
|                                           | 0.5 mg/m <sup>3</sup>                                                                                                                                               |
|                                           | 2.7 mg/m <sup>3</sup>                                                                                                                                               |
|                                           | 1 mg/m <sup>3</sup>                                                                                                                                                 |
| Regulatory reference                      | Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2018. gada 10. jūlijā noteikumiem Nr. 407)                                  |
| Lithuania - Occupational Exposure Limits  |                                                                                                                                                                     |
| Local name                                | Sieros dioksidas                                                                                                                                                    |
| IPRV (OEL TWA)                            | 1.3 mg/m <sup>3</sup>                                                                                                                                               |
|                                           | 0.5 ppm                                                                                                                                                             |
| NRV (OEL C)                               | 2.7 mg/m <sup>3</sup>                                                                                                                                               |
|                                           | 1 ppm                                                                                                                                                               |
| Remark                                    | Ū (ūmus poveikis)                                                                                                                                                   |
| Regulatory reference                      | LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)                                                                                                   |
| Luxembourg - Occupational Exposure Limits |                                                                                                                                                                     |
| Local name                                | Dioxyde de soufre                                                                                                                                                   |
| OEL TWA                                   | 1.3 mg/m <sup>3</sup>                                                                                                                                               |
|                                           | 0.5 ppm                                                                                                                                                             |
| OEL STEL                                  | 2.7 mg/m <sup>3</sup>                                                                                                                                               |
|                                           | 1 ppm                                                                                                                                                               |
| Regulatory reference                      | Mémorial A N° 226 de 2021 concernant la protection de la sécurité et de la santé des salariés contre les risques liés à des agents chimiques sur le lieu de travail |
| Malta - Occupational Exposure Limits      |                                                                                                                                                                     |
| Local name                                | Sulphur dioxide                                                                                                                                                     |
| OEL TWA                                   | 1.3 mg/m <sup>3</sup>                                                                                                                                               |
|                                           | 0.5 ppm                                                                                                                                                             |
| OEL STEL                                  | 2.7 mg/m <sup>3</sup>                                                                                                                                               |
|                                           | 1 ppm                                                                                                                                                               |

# Safety Data Sheet

≤200 ppm NO & ≤100 ppm SO<sub>2</sub> in Nitrogen

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
Reference number: SDS 01520

|                                                   |                                                                                                                                                                |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regulatory reference                              | S.L.424.24 - Chemical Agents at Work Regulations (L.N.356 of 2021)                                                                                             |
| <b>Netherlands - Occupational Exposure Limits</b> |                                                                                                                                                                |
| Local name                                        | Zwavedioxide                                                                                                                                                   |
| TGG-8u (OEL TWA)                                  | 0.7 mg/m <sup>3</sup>                                                                                                                                          |
|                                                   | 0.26 ppm                                                                                                                                                       |
| TGG-15min (OEL STEL)                              | 0.7 mg/m <sup>3</sup>                                                                                                                                          |
|                                                   | 0.26 ppm                                                                                                                                                       |
| Regulatory reference                              | Arbeidsomstandighedenregeling 2023                                                                                                                             |
| <b>Poland - Occupational Exposure Limits</b>      |                                                                                                                                                                |
| Local name                                        | Ditlenek siarki                                                                                                                                                |
| NDS (OEL TWA)                                     | 1.3 mg/m <sup>3</sup>                                                                                                                                          |
| NDSch (OEL STEL)                                  | 2.7 mg/m <sup>3</sup>                                                                                                                                          |
| Regulatory reference                              | Dz. U. 2018 poz. 1286                                                                                                                                          |
| <b>Portugal - Occupational Exposure Limits</b>    |                                                                                                                                                                |
| Local name                                        | Dióxido de enxofre                                                                                                                                             |
| OEL STEL                                          | 0.25 ppm                                                                                                                                                       |
| Remark                                            | A4 (Agente não classificável como carcinogénico no Homem)                                                                                                      |
| Regulatory reference                              | Norma Portuguesa NP 1796:2014                                                                                                                                  |
| <b>Romania - Occupational Exposure Limits</b>     |                                                                                                                                                                |
| Local name                                        | Dioxid de sulf/Anhidridă sulfuroasă                                                                                                                            |
| OEL TWA                                           | 1.3 mg/m <sup>3</sup>                                                                                                                                          |
|                                                   | 0.5 ppm                                                                                                                                                        |
| OEL STEL                                          | 2.7 mg/m <sup>3</sup>                                                                                                                                          |
|                                                   | 1 ppm                                                                                                                                                          |
| Regulatory reference                              | Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 53/2021)                                                                                                    |
| <b>Serbia - Occupational Exposure Limits</b>      |                                                                                                                                                                |
| Local name                                        | сумпор-диоксид                                                                                                                                                 |
| OEL TWA                                           | 1 mg/m <sup>3</sup>                                                                                                                                            |
|                                                   | 1 ppm                                                                                                                                                          |
| OEL STEL                                          | 3 mg/m <sup>3</sup>                                                                                                                                            |
|                                                   | 1 ppm                                                                                                                                                          |
| Remark                                            | ЕУ**** – напомена да се ради о хемијским материјама за које су утврђене индикативне граничне вредности изложености према Директиви 2017/164/ЕУ (четврта листа) |
| Regulatory reference                              | ПРАВИЛНИК о превентивним мерама за безбедан и здрав рад при излагању хемијским материјама („Службени гласник РС”, бр. 106/09, 117/17 и 107/21)                 |

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≤200 ppm NO & ≤100 ppm SO<sub>2</sub> in Nitrogen

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
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| Slovakia - Occupational Exposure Limits |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Local name                              | Oxid siričitý                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| NPHV (OEL TWA)                          | 1.3 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                         | 0.5 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| NPHV (OEL STEL)                         | 2.7 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                         | 1 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Regulatory reference                    | Nariadenie vlády č. 355/2006 Z. z. (236/2020 Z. z.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Slovenia - Occupational Exposure Limits |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Local name                              | žveplov dioksid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| OEL TWA                                 | 1.3 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                         | 0.5 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| OEL STEL                                | 2.7 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                         | 1 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Remark                                  | Y (Snovi, pri katerih ni nevarnosti za zarodek ob upoštevanju mejnih vrednosti in bat vrednosti), EU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Regulatory reference                    | Uradni list RS, št. 72/2021 z dne 11.5.2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Spain - Occupational Exposure Limits    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Local name                              | Dióxido de azufre                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| VLA-ED (OEL TWA)                        | 1.32 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                         | 0.5 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| VLA-EC (OEL STEL)                       | 2.64 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                         | 1 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Remark                                  | s (Esta sustancia tiene prohibida total o parcialmente su comercialización y uso como fitosanitario y/o como biocida. Para una información detallada acerca de las prohibiciones consúltase: Base de datos de productos biocidas:<br><a href="http://www.msssi.gob.es/ciudadanos/productos.do?tipo=plaguicidas">http://www.msssi.gob.es/ciudadanos/productos.do?tipo=plaguicidas</a> Base de datos de productos fitosanitarios<br><a href="http://www.magrama.gob.es/agricultura/pags/fitos/registro/fichas/pdf/Lista_s_a.pdf">http://www.magrama.gob.es/agricultura/pags/fitos/registro/fichas/pdf/Lista_s_a.pdf</a> ). |
| Regulatory reference                    | Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Sweden - Occupational Exposure Limits   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Local name                              | Svaveldioxid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| NGV (OEL TWA)                           | 1.3 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                         | 0.5 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| KGV (OEL STEL)                          | 2.7 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                         | 1 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Remark                                  | 45 (Gränsvärdet skyddar inte astmatiker. Studier har visat att astmatiker inte reagerar på exponeringar av svaveldioxid under 0,2 ppm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

# Safety Data Sheet

≤200 ppm NO & ≤100 ppm SO<sub>2</sub> in Nitrogen

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
Reference number: SDS 01520

|                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regulatory reference                                  | Hygieniska gränsvärden (AFS 2018:1)                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>United Kingdom - Occupational Exposure Limits</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Local name                                            | Sulphur dioxide                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| WEL TWA (OEL TWA)                                     | 1.3 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                       | 0.5 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| WEL STEL (OEL STEL)                                   | 2.7 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                       | 1 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Regulatory reference                                  | EH40/2005 (Fourth edition, 2020). HSE                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Iceland - Occupational Exposure Limits</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Local name                                            | Brennisteinstvíoxíð                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| OEL TWA                                               | 1.3 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                       | 0.5 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| OEL STEL                                              | 2.7 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                       | 1 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Regulatory reference                                  | Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 1069/2018)                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Norway - Occupational Exposure Limits</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Local name                                            | Svoveldioksid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Grenseverdi (OEL TWA)                                 | 1.3 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                       | 0.5 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Korttidsverdi (OEL STEL)                              | 2.7 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                       | 1 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Remark                                                | E: EU har en veiledende grenseverdi og/eller anmerkning for stoffet; 18) Enkelte bedrifter vil av teknisk-økonomiske årsaker ikke kunne overholde grenseverdiene. Det er disse bedriftenes ansvar å dokumentere et forsvarlig arbeidsmiljø. Det forutsettes at bedriften(e) har en plan for reduksjon av eksponering og at man kan vise lavere verdier over tid. Arbeidstilsynet, ansattrepresentanter og verneombud skal konsulteres og informeres om årlige planer og oppnådde resultater. |
| Regulatory reference                                  | FOR-2021-06-28-2248                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>North Macedonia - Occupational Exposure Limits</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Local name                                            | сулфур диоксид                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| OEL TWA                                               | 1.3 mg/m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                       | 0.5 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Remark                                                | (Y)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Regulatory reference                                  | Правилник за минималните барања за безбедност и здравје при работа на вработени од ризици поврзани со изложување на хемиски супстанции („Службен весник на Република Македонија” бр.46/10)                                                                                                                                                                                                                                                                                                   |
| <b>Switzerland - Occupational Exposure Limits</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Local name                                            | Dioxyde de soufre / Schwefeldioxid                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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≤200 ppm NO & ≤100 ppm SO<sub>2</sub> in Nitrogen

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
Reference number: SDS 01520

|                                                   |                                                                                        |
|---------------------------------------------------|----------------------------------------------------------------------------------------|
| MAK (OEL TWA)                                     | 1.3 mg/m <sup>3</sup>                                                                  |
|                                                   | 0.5 ppm                                                                                |
| KZGW (OEL STEL)                                   | 2.7 mg/m <sup>3</sup>                                                                  |
|                                                   | 1 ppm                                                                                  |
| Critical toxicity                                 | VRI / UAW                                                                              |
| Notation                                          | SS <sub>C</sub> / SS <sub>C</sub>                                                      |
| Remark                                            | NIOSH, DFG, OSHA                                                                       |
| Regulatory reference                              | www.suva.ch, 01.01.2023                                                                |
| <b>USA - ACGIH - Occupational Exposure Limits</b> |                                                                                        |
| Local name                                        | Sulfur dioxide                                                                         |
| ACGIH OEL STEL                                    | 0.25 ppm                                                                               |
| Remark (ACGIH)                                    | TLV® Basis: Pulm func; LRT irr. Notations: A4 (Not classifiable as a Human Carcinogen) |
| Regulatory reference                              | ACGIH 2023                                                                             |

| <b>Sulphur dioxide (7446-09-5)</b>      |                       |
|-----------------------------------------|-----------------------|
| DNEL: Derived no effect level (Workers) |                       |
| Acute - local effects, inhalation       | 2.7 mg/m <sup>3</sup> |
| Long-term - local effects, inhalation   | 2.7 mg/m <sup>3</sup> |

PNEC (Predicted No-Effect Concentration) : None established.

## 8.2. Exposure controls

### 8.2.1. Appropriate engineering controls

Provide adequate general and local exhaust ventilation.  
Systems under pressure should be regularly checked for leakages.  
Ensure exposure is below occupational exposure limits (where available).  
Oxygen detectors should be used when asphyxiating gases may be released.  
Consider the use of a work permit system e.g. for maintenance activities.

### 8.2.2. Individual protection measures, e.g. personal protective equipment

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk.

The following recommendations should be considered:

PPE compliant to the recommended EN/ISO standards should be selected.

#### • Eye/face protection

: Wear safety glasses with side shields.  
Standard EN 166 - Personal eye-protection - specifications.

#### • Skin protection

##### - Hand protection

: Wear working gloves when handling gas containers.  
Standard EN 388 - Protective gloves against mechanical risks, performance level 1 or higher.

##### - Other

: Wear safety shoes while handling containers.  
Standard EN ISO 20345 - Personal protective equipment - Safety footwear.

- Respiratory protection : Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.  
When indicated by a risk assessment, Respiratory Protective Equipment must be used. The selection of the Respiratory Protective Device (RPD) must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected RPD.  
Self contained breathing apparatus is recommended, where unknown exposure may be expected, e.g. during maintenance activities on installation systems.
- Thermal hazards : None in addition to the above sections.

### 8.2.3. Environmental exposure controls

None necessary.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|                                                 |                                                                                                                                                                                        |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Appearance                                      |                                                                                                                                                                                        |
| - Physical state at 20°C / 101.3kPa             | : Gas.                                                                                                                                                                                 |
| - Colour                                        | : Mixture contains one or more component(s) which have the following colour(s):<br>Brownish gas Colourless.                                                                            |
| Odour                                           | : Odour threshold is subjective and inadequate to warn of overexposure.<br>Mixture contains one or more component(s) which have the following odour:<br>Pungent.                       |
| Melting point / Freezing point                  | : Not applicable for gases and gas mixtures.                                                                                                                                           |
| Boiling point                                   | : Not applicable for gas mixtures.<br>It is technically not possible to determine the boiling point or range of this mixture.<br>Component with lowest boiling point: Nitrogen -196 °C |
| Flammability                                    | : Non flammable.                                                                                                                                                                       |
| Lower explosion limit                           | : Not available                                                                                                                                                                        |
| Upper explosion limit                           | : Not available                                                                                                                                                                        |
| Flash point                                     | : Not applicable for gases and gas mixtures.                                                                                                                                           |
| Auto-ignition temperature                       | : Non flammable.                                                                                                                                                                       |
| Decomposition temperature                       | : Not applicable.                                                                                                                                                                      |
| pH                                              | : Not applicable for gases and gas mixtures.                                                                                                                                           |
| Viscosity, kinematic                            | : Not applicable for gases and gas mixtures.                                                                                                                                           |
| Water solubility [20°C]                         | : Mixture is partially soluble in water                                                                                                                                                |
| Partition coefficient n-octanol/water (Log Kow) | : Not available                                                                                                                                                                        |
| Vapour pressure [20°C]                          | : Not applicable.                                                                                                                                                                      |
| Vapour pressure [50°C]                          | : Not applicable.                                                                                                                                                                      |
| Density and/or relative density                 | : Not applicable.                                                                                                                                                                      |
| Relative vapour density (air=1)                 | : Lighter or similar to air.                                                                                                                                                           |
| Particle characteristics                        | : Not applicable for gases and gas mixtures.                                                                                                                                           |

### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

|                      |                            |
|----------------------|----------------------------|
| Explosion limits     | : Non flammable.           |
| Oxidising properties | : No oxidising properties. |

#### 9.2.2. Other safety characteristics

|            |         |
|------------|---------|
| Other data | : None. |
|------------|---------|

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Data for mixtures are not available.  
This mixture contains components with the following reactivity : Violently oxidises organic material.

#### 10.2. Chemical stability

Stable under normal conditions.

#### 10.3. Possibility of hazardous reactions

None.

#### 10.4. Conditions to avoid

Avoid moisture in installation systems.

#### 10.5. Incompatible materials

For additional information on compatibility refer to ISO 11114.

#### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

### SECTION 11: Toxicological information

#### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity : Classification criteria are not met.

##### Nitric oxide (10102-43-9)

|                             |             |
|-----------------------------|-------------|
| LC50 Inhalation - Rat [ppm] | 57.5 ppm/4h |
|-----------------------------|-------------|

##### Sulphur dioxide (7446-09-5)

|                             |             |
|-----------------------------|-------------|
| LC50 Inhalation - Rat [ppm] | 1260 ppm/4h |
|-----------------------------|-------------|

|                                       |                                              |
|---------------------------------------|----------------------------------------------|
| Skin corrosion/irritation             | : Classification criteria are not met.       |
| Serious eye damage/irritation         | : Classification criteria are not met.       |
| Respiratory or skin sensitisation     | : No known effects from this product.        |
| Germ cell mutagenicity                | : No known effects from this product.        |
| Carcinogenicity                       | : No known effects from this product.        |
| Toxic for reproduction : Fertility    | : No known effects from this product.        |
| Toxic for reproduction : unborn child | : No known effects from this product.        |
| STOT-single exposure                  | : No known effects from this product.        |
| STOT-repeated exposure                | : No known effects from this product.        |
| Aspiration hazard                     | : Not applicable for gases and gas mixtures. |

#### 11.2. Information on other hazards

Other information : The substance/mixture has no endocrine disrupting properties.

### SECTION 12: Ecological information

#### 12.1. Toxicity

|                                 |                                        |
|---------------------------------|----------------------------------------|
| Assessment                      | : Classification criteria are not met. |
| EC50 48h - Daphnia magna [mg/l] | : No data available.                   |

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EC50 72h - Algae [mg/l] : No data available.  
LC50 96 h - Fish [mg/l] : No data available.

| Nitric oxide (10102-43-9)       |                    |
|---------------------------------|--------------------|
| EC50 48h - Daphnia magna [mg/l] | No data available. |
| EC50 72h - Algae [mg/l]         | No data available. |
| LC50 96 h - Fish [mg/l]         | No data available. |

| Sulphur dioxide (7446-09-5)     |                    |
|---------------------------------|--------------------|
| EC50 48h - Daphnia magna [mg/l] | 89 mg/l            |
| EC50 72h - Algae [mg/l]         | 48.1 mg/l          |
| LC50 96 h - Fish [mg/l]         | No data available. |

| Nitrogen (7727-37-9)            |                    |
|---------------------------------|--------------------|
| EC50 48h - Daphnia magna [mg/l] | No data available. |
| EC50 72h - Algae [mg/l]         | No data available. |
| LC50 96 h - Fish [mg/l]         | No data available. |

## 12.2. Persistence and degradability

Assessment : No data available.

## 12.3. Bioaccumulative potential

Assessment : No data available.

## 12.4. Mobility in soil

Assessment : Because of its high volatility, the product is unlikely to cause ground or water pollution.  
Partition into soil is unlikely.

## 12.5. Results of PBT and vPvB assessment

Assessment : Not classified as PBT or vPvB.

## 12.6. Endocrine disrupting properties

Assessment : The substance/mixture has no endocrine disrupting properties.

## 12.7. Other adverse effects

Other adverse effects : No known effects from this product.  
Effect on the ozone layer : No effect on the ozone layer.  
Effect on global warming : No known effects from this product.

# SECTION 13: Disposal considerations

## 13.1. Waste treatment methods

May be vented to atmosphere in a well ventilated place.  
Do not discharge into any place where its accumulation could be dangerous.  
Return unused product in original container to supplier.

List of hazardous waste codes (from Commission Decision 2000/532/EC as amended) : 16 05 05 : Gases in pressure containers other than those mentioned in 16 05 04.

### 13.2. Additional information

External treatment and disposal of waste should comply with applicable local and/or national regulations.

## SECTION 14: Transport information

### 14.1. UN number or ID number

In accordance with ADR / RID / IMDG / IATA / ADN  
UN-No.

: 1956

### 14.2. UN proper shipping name

Transport by road/rail/inland waterways  
(ADR/RID/ADN)

: COMPRESSED GAS, N.O.S. (Nitrogen, Nitric oxide)

Transport by air (ICAO-TI / IATA-DGR)

: Compressed gas, n.o.s. (Nitrogen, Nitric oxide)

Transport by sea (IMDG)

: COMPRESSED GAS, N.O.S. (Nitrogen, Nitric oxide)

### 14.3. Transport hazard class(es)

Labelling



2.2 : Non-flammable, non-toxic gases.

Transport by road/rail/inland waterways  
(ADR/RID/ADN)

Class : 2  
Classification code : 1A  
Hazard identification number : 20  
Tunnel Restriction : E - Passage forbidden through tunnels of category E

Transport by air (ICAO-TI / IATA-DGR)

Class / Div. (Sub. risk(s)) : 2.2

Transport by sea (IMDG)

Class / Div. (Sub. risk(s)) : 2.2  
Emergency Schedule (EmS) - Fire : F-C  
Emergency Schedule (EmS) - Spillage : S-V

### 14.4. Packing group

Transport by road/rail/inland waterways (ADR/RID/ADN) : Not applicable.  
Transport by air (ICAO-TI / IATA-DGR) : Not applicable.  
Transport by sea (IMDG) : Not applicable.

### 14.5. Environmental hazards

Transport by road/rail/inland waterways (ADR/RID/ADN) : None.  
Transport by air (ICAO-TI / IATA-DGR) : None.  
Transport by sea (IMDG) : None.

### 14.6. Special precautions for user

Packing Instruction(s)

Transport by road/rail/inland waterways (ADR/RID/ADN) : P200.  
Transport by air (ICAO-TI / IATA-DGR)  
Passenger and Cargo Aircraft : 200.  
Cargo Aircraft only : 200.  
Transport by sea (IMDG) : P200.

# Safety Data Sheet

≤200 ppm NO & ≤100 ppm SO<sub>2</sub> in Nitrogen

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
Reference number: SDS 01520

- Special transport precautions
- : Avoid transport on vehicles where the load space is not separated from the driver's compartment.
  - Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.
  - Before transporting product containers:
    - Ensure there is adequate ventilation.
    - Ensure that containers are firmly secured.
    - Ensure valve is closed and not leaking.
    - Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
    - Ensure valve protection device (where provided) is correctly fitted.

## 14.7. Maritime transport in bulk according to IMO instruments

Not applicable.

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU-Regulations

- Restrictions on use : Contains no substance(s) listed on the REACH Candidate List.
- Other information, restriction and prohibition regulations : Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals).
- Seveso Directive : 2012/18/EU (Seveso III) : Not covered.

#### National regulations

- Water hazard class (WGK) : nwg - Non-hazardous to water.
- Regulatory reference : Ensure all national/local regulations are observed.

### 15.2. Chemical safety assessment

A CSA does not need to be carried out for this product.

## SECTION 16: Other information

- Indication of changes : Safety data sheet in accordance with commission regulation (EU) No 2020/878.
- Abbreviations and acronyms
- : ATE - Acute Toxicity Estimate.
  - CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008.
  - REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
  - EINECS - European Inventory of Existing Commercial Chemical Substances.
  - CAS# - Chemical Abstract Service number.
  - PPE - Personal Protection Equipment.
  - LC50 - Lethal Concentration to 50 % of a test population.
  - RMM - Risk Management Measures.
  - PBT - Persistent, Bioaccumulative and Toxic.
  - vPvB - Very Persistent and Very Bioaccumulative.
  - STOT- SE : Specific Target Organ Toxicity - Single Exposure.
  - CSA - Chemical Safety Assessment.
  - EN - European Standard.
  - UN - United Nations.
  - ADR - Agreement concerning the International Carriage of Dangerous Goods by Road.
  - IATA - International Air Transport Association.
  - IMDG code - International Maritime Dangerous Goods.
  - RID - Regulations concerning the International Carriage of Dangerous Goods by Rail.
  - WGK - Water Hazard Class.
  - STOT - RE : Specific Target Organ Toxicity - Repeated Exposure.
  - UFI : Unique Formula Identifier.

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|                     |                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Training advice     | : The hazard of asphyxiation is often overlooked and must be stressed during operator training.<br>For more guidance, refer to EIGA SL 01 "Dangers of Asphyxiation", downloadable at <a href="http://www.eiga.eu">http://www.eiga.eu</a> .                                                                                                                                    |
| Further information | : Classification using data from databases maintained by the European Industrial Gases Association (EIGA). Data is maintained in EIGA doc 169 : 'Classification and Labelling Guide', downloadable at : <a href="http://www.eiga.eu">http://www.eiga.eu</a> .<br>Classification in accordance with the procedures and calculation methods of Regulation (EC) 1272/2008 (CLP). |

| Full text of H- and EUH-statements |                                                                                            |
|------------------------------------|--------------------------------------------------------------------------------------------|
| Acute Tox. 1 (Inhalation:gas)      | Acute toxicity (inhalation:gas) Category 1                                                 |
| Acute Tox. 3 (Inhalation:gas)      | Acute toxicity (inhalation:gas) Category 3                                                 |
| Eye Dam. 1                         | Serious eye damage/eye irritation, Category 1                                              |
| H270                               | May cause or intensify fire; oxidiser.                                                     |
| H280                               | Contains gas under pressure; may explode if heated.                                        |
| H314                               | Causes severe skin burns and eye damage.                                                   |
| H318                               | Causes serious eye damage.                                                                 |
| H330                               | Fatal if inhaled.                                                                          |
| H331                               | Toxic if inhaled.                                                                          |
| H335                               | May cause respiratory irritation.                                                          |
| Ox. Gas 1                          | Oxidising Gases, Category 1                                                                |
| Press. Gas (Comp.)                 | Gases under pressure : Compressed gas                                                      |
| Press. Gas (Liq.)                  | Gases under pressure : Liquefied gas                                                       |
| Skin Corr. 1B                      | Skin corrosion/irritation, Category 1, Sub-Category 1B                                     |
| STOT SE 3                          | Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation |

|                         |                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DISCLAIMER OF LIABILITY | : Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.<br>Details given in this document are believed to be correct at the time of going to press.<br>Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. |
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**End of document**