Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

DONOPA

SDS reference: 377

Published date: 01/01/2019
Version: 1.0

Danger

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

1.1. Product identifier

SDS no : 377

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

Relevant identified uses : Medical applications.

Uses advised against : Consumer use.

1.3. Details of the supplier of the safety data sheet

Company identification : Lagaay International B.V.
Van Helmontstraat 99
3029 AA Rotterdam, The Netherlands
+31 (0) 10 123 47 81
msds.medox@lagaay.com

1.4. Emergency telephone number

No additional information available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Physical hazards	Oxidising Gases, Category 1	H270	Calculation method
	Gases under pressure : Liquefied gas	H280	Calculation method
Health hazards	Specific target organ toxicity — Single exposure, Category 3, Narcosis	H336	Calculation method

2.2. Label elements

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

Hazard pictograms (CLP) :

GHS03 GHS04 GHS07

Signal word (CLP) : Danger

Hazard statements (CLP) : H270 - May cause or intensify fire; oxidiser..
H280 - Contains gas under pressure; may explode if heated..
H336 - May cause drowsiness or dizziness..

Precautionary statements (CLP)

- Prevention : P220 - Keep away from combustible materials.
  P244 - Keep valves and fittings free from oil and grease..
- Response : P304+P340+P315 - IF INHALED : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice / attention.
  P370+P376 - In case of fire: stop leak if safe to do so..
- Storage : P403 - Store in a well-ventilated place..

2.3. Other hazards

: None.

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]
Nitrous oxide	(CAS-No.) 10024-97-2 (EC-No.) 233-032-0 (EC Index-No.) (REACH-no) 01-2119970538-25	50	Ox. Gas 1, H270 Press. Gas (Liq.), H280 STOT SE 3, H336
Oxygen	(CAS-No.) 7782-44-7 (EC-No.) 231-956-9 (EC Index-No.) 008-001-00-8 (REACH-no) *1	50	Ox. Gas 1, H270 Press. Gas (Comp.), H280

Full text of R- and H-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.

**2: Registration deadline not expired*.

**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 : For liquid spillage - flush with water for at least 15 minutes.
- Eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes.
- Ingestion : Ingestion is not considered a potential route of exposure.

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

: In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.
Refer to 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.
- Unsuitable extinguishing media : Do not use water jet to extinguish.

5.2. Special hazards arising from the substance or mixture

Specific hazards : Supports combustion.
Exposure to fire may cause containers to rupture/explode.

Hazardous combustion products : If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition:
Nitric oxide/nitrogen 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 : 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

: Try to stop release.
Evacuate area.
Monitor concentration of released product.
Eliminate ignition sources.
Ensure adequate air ventilation.
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
Act in accordance with local emergency plan.
Stay upwind.

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	:	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 regularily) checked for leaks before use. Do not smoke while handling product. Protect eyes, face and skin from liquid splashes. Keep equipment free from oil and grease. Use no oil or grease. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Do not breathe gas. Avoid release of product into atmosphere.
Safe handling of the gas receptacle	:	Open valve slowly to avoid pressure shock. Refer to supplier's container handling instructions. Do not allow backfeed into the container. Protect cylinders 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 cylinder 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 cylinder contents. Containers should be stored in the vertical position and properly secured to prevent them from falling over.

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.
Segregate from flammable gases and other flammable materials in store.
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

Nitrous oxide (10024-97-2)		
OEL : Occupational Exposure Limits		
United Kingdom	WEL - LTEL - UK [mg/m³]	183 mg/m³
	WEL - LTEL - UK [ppm]	100 ppm

Nitrous oxide (10024-97-2)	
DNEL: Derived no effect level (Workers)	
Long-term - systemic effects, inhalation	183 mg/m³

Nitrous oxide (10024-97-2)

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).
Gas detectors should be used when oxidising 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.
Wear goggles and a face shield when transfilling or breaking transfer connections.
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 risk.

- Other : Consider the use of flame resistant safety clothing.
Standard EN ISO 14116 - Limited flame spread materials.
Wear safety shoes while handling containers.
Standard EN ISO 20345 - Personal protective equipment - Safety footwear.

• Respiratory protection : Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres.
Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.

• Thermal hazards : Wear cold insulating gloves when transfilling or breaking transfer connections.
Standard EN 511 - Cold insulating gloves.

8.2.3. Environmental exposure controls

: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

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): Colourless.
Odour	: There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour: Sweetish.
Odour threshold	: Odour threshold is subjective and inadequate to warn of overexposure.
pH value	: Not applicable for gas mixtures.
Molar mass	: Not applicable for gas mixtures.
Melting point	: Not applicable for gas mixtures.
Boiling point	: Not applicable for gas mixtures.
Flash point	: Not applicable for gas mixtures.
Evaporation rate (ether=1)	: Not applicable for gas mixtures.
Flammability range	: Non flammable.
Vapour pressure [20°C]	: No reliable data available.
Vapour pressure [50°C]	: No reliable data available.
Relative density, gas (air=1)	: Heavier than air.

Solubility in water	: No data available
Partition coefficient n-octanol/water [log Kow]	: Not applicable for gas mixtures.
Auto-ignition temperature	: Non flammable.
Viscosity [20°C]	: Not applicable.
Explosive Properties	: Not applicable.
Oxidising Properties	: Oxidiser.

9.2. Other information

Other data : Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

SECTION 10: Stability and reactivity

10.1. Reactivity

: No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

: Stable under normal conditions.

10.3. Possibility of hazardous reactions

: May react violently with combustible materials.
May react violently with reducing agents.
Violently oxidises organic material.

10.4. Conditions to avoid

: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

10.5. Incompatible materials

: Reducing agents
Grease
Oil
May react violently with combustible materials.
May react violently with reducing agents.
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 toxicological effects

Acute toxicity : Classification criteria are not met.
Toxicological effects not expected from this product if occupational exposure limit values are not exceeded.

Nitrous oxide (10024-97-2)	
LC50 inhalation rat (ppm)	500000 ppm/4h

Skin corrosion/irritation	: No known effects from this product.
Serious eye damage/irritation	: No known effects from this product.
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	: In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.
STOT-repeated exposure	: No known effects from this product.
Aspiration hazard	: Not applicable for gases and gas mixtures.

SECTION 12: Ecological information

12.1. Toxicity

Assessment : Classification criteria are not met.

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.

Nitrous oxide (10024-97-2)	
EC50 48h - Daphnia magna [mg/l]	Study scientifically unjustified.
EC50 72h - Algae [mg/l]	Study scientifically unjustified.
LC50 96 h - Fish [mg/l]	Study scientifically unjustified.

Oxygen (7782-44-7)	
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 : No data available.

12.5. Results of PBT and vPvB assessment

Assessment : Not classified as PBT or vPvB.

12.6. Other adverse effects

Effect on the ozone layer : None.
Effect on global warming : Contains greenhouse gas(es).

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Contact supplier if guidance is required.
Avoid discharge to atmosphere.
Do not discharge into any place where its accumulation could be dangerous.
Ensure that the emission levels from local regulations or operating permits are not exceeded.
Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at http://www.eiga.org for more guidance on suitable disposal methods.

List of hazardous waste codes (from Commission Decision 2001/118/EC) : 16 05 04 *: Gases in pressure containers (including halons) containing dangerous substances.

13.2. Additional information

: None.

SECTION 14: Transport information

14.1. UN number

UN-No. : 3156

14.2. UN proper shipping name

Transport by road/rail (ADR/RID) : COMPRESSED GAS, OXIDIZING, N.O.S. (oxygen, Nitrous oxide)

Transport by air (ICAO-TI / IATA-DGR) : COMPRESSED GAS, OXIDIZING, N.O.S.

Transport by sea (IMDG) : COMPRESSED GAS, OXIDIZING, N.O.S. (oxygen, Nitrous oxide)

14.3. Transport hazard class(es)

Labelling :

2.2 : Non-flammable, non-toxic gases
5.1 : Oxidizing substances

Transport by road/rail (ADR/RID)

Class : 2
Classification code : 1O
Hazard identification number : 25
Tunnel Restriction : E - Passage forbidden through tunnels of category E

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

Class / Div. (Sub. risk(s)) : 2.2 (5.1)

Transport by sea (IMDG)

Class / Div. (Sub. risk(s)) : 2.2 (5.1)
Emergency Schedule (EmS) - Fire : F-C
Emergency Schedule (EmS) - Spillage : S-W

14.4. Packing group

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

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 cylinder 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. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: Not applicable.

SECTION 15: Regulatory information

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

EU-Regulations

Seveso Directive : 2012/18/EU (Seveso III) : Covered.

National regulations

National legislation : Ensure all national/local regulations are observed.

Water hazard class (WGK) : -

15.2. Chemical safety assessment

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

SECTION 16: Other information

Indication of changes	: Revised safety data sheet in accordance with commission regulation (EU) No 2015/830.
Training advice	: Receptacle under pressure.
Further information	: This Safety Data Sheet has been established in accordance with the applicable European Union legislation. Classification in accordance with the calculation methods of Regulation (EC) 1272/2008 CLP.

Full text of H- and EUH-statements

Ox. Gas 1	Oxidising Gases, Category 1
Press. Gas (Comp.)	Gases under pressure : Compressed gas
Press. Gas (Liq.)	Gases under pressure : Liquefied gas
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H270	May cause or intensify fire; oxidiser.
H280	Contains gas under pressure; may explode if heated.
H336	May cause drowsiness or dizziness.
R8	Contact with combustible material may cause fire
O	Oxidising

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DISCLAIMER OF LIABILITY : Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.
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