

SAFETY DATA SHEET

Version 2.0
Revision Date 14.09.2017
Supersedes Version: 1.2

SDS Number 300000037900
Print Date 10.12.2019

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

1.1. Product identifier : Mixture of Gases

Refer to Section 3 for REACH information

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

Use of the Substance/Mixture : General Industrial

Restrictions on Use : No data available.

1.3. Details of the supplier of the safety data sheet : SEMA Gases
Driemanssteeweg 190
3084 CB, Rotterdam
The Netherlands

Email Address – Technical Information : info@semagases.com

1.4. Emergency telephone number : +31 (0) 10 293 8888

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Gases under pressure - Compressed gas. H280:Contains gas under pressure; may explode if heated.

2.2. Label elements

Hazard pictograms/symbols



Signal Word: Warning

Hazard Statements:

H280:Contains gas under pressure; may explode if heated.

SAFETY DATA SHEET

Version 2.0
Revision Date 14.09.2017

SDS Number 300000037900
Print Date 10.12.2019

Precautionary Statements:

Storage : P403:Store in a well-ventilated place.

2.3. Other hazards

High pressure gas.
Can cause rapid suffocation.

Environmental Effects

Not harmful.

SECTION 3: Composition/information on ingredients

3.1. Substances : Not applicable.

3.2. Mixtures

Components	EINECS / ELINCS Number	CAS Number	Concentration (Volume)
Benzene	200-753-7	71-43-2	5 PPM
Oxygen	231-956-9	7782-44-7	20.9 %
Nitrogen	231-783-9	7727-37-9	> 79.09%

Components	Classification (CLP)	REACH Reg. #
Benzene	Flam. Liq. 2 ;H225 Carc. 1A ;H350 Muta. 1B ;H340 STOT RE 1 ;H372 Asp. Tox. 1 ;H304 Eye Irrit. 2 ;H319 Skin Irrit. 2 ;H315	*3
Oxygen	Ox. Gas 1 ;H270 Press. Gas (Comp.) ;H280	*1
Nitrogen	Press. Gas (Comp.) ;H280	*1

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

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

*3:Registration deadline not expired.

Refer to section 16 for full text of each relevant hazard statement (H).

Concentration is nominal. For the exact product composition, please refer to technical specifications.

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice : Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

Eye contact : In case of direct contact with eyes, seek medical advice.

SAFETY DATA SHEET

Version 2.0
Revision Date 14.09.2017

SDS Number 300000037900
Print Date 10.12.2019

- Skin contact : Adverse effects not expected from this product.
- Ingestion : Ingestion is not considered a potential route of exposure.
- Inhalation : Remove to fresh air. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. In case of shortness of breath, give oxygen.

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

- Symptoms : Exposure to oxygen deficient atmosphere may cause the following symptoms: Dizziness. Salivation. Nausea. Vomiting. Loss of mobility/consciousness.

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

- Treatment : If exposed or concerned: Get medical attention/advice.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : All known extinguishing media can be used.

- Extinguishing media which must not be used for safety reasons. : No data available.

5.2. Special hazards arising from the substance or mixture

- : Upon exposure to intense heat or flame, cylinder will vent rapidly and or rupture violently. Product is nonflammable and does not support combustion. Move away from container and cool with water from a protected position. Keep containers and surroundings cool with water spray.

5.3. Advice for firefighters

- : Wear self contained breathing apparatus for fire fighting if necessary. 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

- : Evacuate personnel to safe areas. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Monitor oxygen level. Ventilate the area.

6.2. Environmental precautions

- : Do not discharge into any place where its accumulation could be dangerous. Prevent further leakage or spillage if safe to do so.

6.3. Methods and material for containment and cleaning up

- : Ventilate the area.

Additional advice

- : If possible, stop flow of product. Increase ventilation to the release area and monitor oxygen level. If leak is from cylinder or cylinder valve, call the emergency telephone number. If the leak is in the user's system, close the cylinder valve and

SAFETY DATA SHEET

Version 2.0
Revision Date 14.09.2017

SDS Number 300000037900
Print Date 10.12.2019

safely vent the pressure before attempting repairs.

6.4. Reference to other sections : For more information refer to Sections 8 & 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not allow storage area temperature to exceed 50°C (122°F). Only experienced and properly instructed persons should handle compressed gases/cryogenic liquids. Before using the product, determine its identity by reading the label. Know and understand the properties and hazards of the product before use. When doubt exists as to the correct handling procedure for a particular gas, contact the supplier. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. 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. Use an adjustable strap wrench to remove over-tight or rusted caps. Before connecting the container, check the complete gas system for suitability, particularly for pressure rating and materials. Before connecting the container for use, ensure that back feed from the system into the container is prevented. Ensure the complete gas system is compatible for pressure rating and materials of construction. Ensure the complete gas system has been checked for leaks before use. Employ suitable pressure regulating devices on all containers when the gas is being emitted to systems with lower pressure rating than that of the container. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing a leak to occur. Open valve slowly. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Close valve after each use and when empty. Replace outlet caps or plugs and container caps as soon as container is disconnected from equipment. Do not subject containers to abnormal mechanical shock. Never attempt to lift a cylinder by its valve protection cap or guard. Do not use containers as rollers or supports or for any other purpose than to contain the gas as supplied. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit. Do not smoke while handling product or cylinders. Never re-compress a gas or a gas mixture without first consulting the supplier. Never attempt to transfer gases from one cylinder/container to another. Always use backflow protective device in piping. When returning cylinder install valve outlet cap or plug leak tight. Never use direct flame or electrical heating devices to raise the pressure of a container. Containers should not be subjected to temperatures above 50°C (122°F).

7.2. Conditions for safe storage, including any incompatibilities

Full containers should be stored so that oldest stock is used first. Containers should be stored in a purpose build compound which should be well ventilated, preferably in the open air. Stored containers should be periodically checked for general condition and leakage. Observe all regulations and local requirements regarding storage of containers. Protect containers stored in the open against rusting and extremes of weather. Containers should not be stored in conditions likely to encourage corrosion. Containers should be stored in the vertical position and properly secured to prevent toppling. The container valves should be tightly closed and where appropriate valve outlets should be capped or plugged. Container valve guards or caps should be in place. Keep containers tightly closed in a cool, well-ventilated place. Store containers in location free from fire risk and away from sources of heat and ignition. Full and empty cylinders should be segregated. Do not allow storage temperature to exceed 50°C (122°F). Return empty containers in a timely manner.

Technical measures/Precautions

Containers should be segregated in the storage area according to the various categories (e.g. flammable, toxic, etc.) and in accordance with local regulations. Keep away from combustible material.

7.3. Specific end use(s)

Refer to section 1 or the extended SDS if applicable.

SAFETY DATA SHEET

Version 2.0
Revision Date 14.09.2017

SDS Number 300000037900
Print Date 10.12.2019

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limit(s)

Benzene	Time Weighted Average (TWA): MAC (NL)	1 ppm	3.25 mg/m ³
Benzene	Time Weighted Average (TWA): EU OELIII	1 ppm	3.25 mg/m ³
Benzene	Time Weighted Average (TWA): NL OEL	-	3.25 mg/m ³
Benzene	Time Weighted Average (TWA): EU SCOELS	1.0 ppm	3.25 mg/m ³

If applicable, refer to the extended section of the SDS for further information on CSA.

8.2. Exposure controls

Engineering measures

Provide natural or mechanical ventilation to prevent oxygen deficient atmospheres below 19.5% oxygen.

Personal protective equipment

- Respiratory protection : Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmosphere.
Air purifying respirators will not provide protection. Users of breathing apparatus must be trained.
- Hand protection : Wear working gloves when handling gas containers.
Standard EN 388 - Protective gloves against mechanical risk.
- Eye/face Protection : Safety glasses recommended when handling cylinders.
Standard EN 166 - Personal eye-protection.
- Skin and body protection : Safety shoes are recommended when handling cylinders.
Standard EN ISO 20345 - Personal protective equipment - Safety footwear.
- Special instructions for protection and hygiene : Ensure adequate ventilation, especially in confined areas.
- Environmental Exposure Controls : If applicable, refer to the extended section of the SDS for further information on CSA.
- Remarks : Simple asphyxiant.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- (a/b) Physical state/Colour : Compressed gas. Colorless.
- (c) Odour : Not determined.
- (c) Odour : Mixture contains one or more component(s) which have the following odor: No odor warning properties. Sweet.
- (e) Relative Density : 0.9958 (air = 1) Lighter or similar to air.
- (f) Melting point / freezing point : No data available.
- (h) Vapor pressure : No data available.
- (i) Water solubility : No data available.
- (j) Partition coefficient: : Not known.

SAFETY DATA SHEET

Version 2.0
Revision Date 14.09.2017

SDS Number 300000037900
Print Date 10.12.2019

n-octanol/water [log Kow]

(k) pH : Not applicable for gases and gas mixtures.

(l) Viscosity : No reliable data available.

(m) Particle characteristics : Not applicable for gases and gas mixtures.

(n) Upper and lower explosion /
flammability limits : Non flammable.

(o) Flash point : Not applicable for gases and gas mixtures.

(p) Autoignition temperature : Non flammable.

(q) Decomposition
temperature : Not applicable.

9.2. Other information

Explosive properties : Not applicable.

Oxidizing properties : No data available.

Molecular Weight : 28.84 g/mol

Odor threshold : Odour threshold is subjective and inadequate to warn of overexposure.

Evaporation rate : Not applicable for gases and gas mixtures.

Flammability (solid, gas) : Refer to product classification in Section 2

Relative vapor density : No data available.

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 : No data available.

10.4. Conditions to avoid : None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials : No data available.

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

SAFETY DATA SHEET

Version 2.0
Revision Date 14.09.2017

SDS Number 300000037900
Print Date 10.12.2019

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure

- Effects on Eye : In case of direct contact with eyes, seek medical advice.
- Effects on Skin : Adverse effects not expected from this product.
- Inhalation Effects : In high concentrations may cause asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves.
- Ingestion Effects : Ingestion is not considered a potential route of exposure.
- Symptoms : Exposure to oxygen deficient atmosphere may cause the following symptoms: Dizziness. Salivation. Nausea. Vomiting. Loss of mobility/consciousness.

Acute toxicity

- Acute Oral Toxicity : No data is available on the product itself.
- Acute Inhalation Toxicity : No data is available on the product itself.
- Acute Dermal Toxicity : No data is available on the product itself.
- Skin corrosion/irritation : No data available.
- Serious eye damage/eye irritation : No data available.
- Sensitization. : No data available.

Chronic toxicity or effects from long term exposures

- Carcinogenicity : No data available.
- Reproductive toxicity : No data is available on the product itself.
- Germ cell mutagenicity : No data is available on the product itself.
- Specific target organ systemic toxicity (single exposure) : No data available.
- Specific target organ systemic toxicity (repeated exposure) : No data available.
- Aspiration hazard : No data available.

SECTION 12: Ecological information

12.1. Toxicity

- Aquatic toxicity : No data is available on the product itself.

SAFETY DATA SHEET

Version 2.0
Revision Date 14.09.2017

SDS Number 300000037900
Print Date 10.12.2019

Toxicity to other organisms : No data is available on the product itself.

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

Refer to Section 9 "Partition Coefficient (n-octanol/water)".

12.4. Mobility in soil

Because of its high volatility, the product is unlikely to cause ground pollution.

12.5. Results of PBT and vPvB assessment

If applicable, refer to the extended section of the SDS for further information on CSA.

12.6. Other adverse effects

No data available.

Effect on the ozone layer

Ozone Depleting Potential : No data available.

Global Warming Potential : No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods : Contact supplier if guidance is required. Return unused product in original cylinder to supplier. 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: 16 05 05: Gases in pressure containers other than those mentioned in 16 05 04.

Contaminated packaging : Return cylinder to supplier.

SECTION 14: Transport information

ADR

UN/ID No. : UN1956
Proper shipping name : COMPRESSED GAS, N.O.S., (Nitrogen, Oxygen)
Class or Division : 2
Tunnel Code : (E)
Label(s) : 2.2
ADR/RID Hazard ID no. : 20
Marine Pollutant : No

IATA

SAFETY DATA SHEET

Version 2.0
Revision Date 14.09.2017

SDS Number 300000037900
Print Date 10.12.2019

UN/ID No. : UN1956
Proper shipping name : Compressed gas, n.o.s., (Nitrogen, Oxygen)
Class or Division : 2.2
Label(s) : 2.2
Marine Pollutant : No

IMDG

UN/ID No. : UN1956
Proper shipping name : COMPRESSED GAS, N.O.S., (Nitrogen, Oxygen)
Class or Division : 2.2
Label(s) : 2.2
Marine Pollutant : No
Segregation Group: : None

RID

UN/ID No. : UN1956
Proper shipping name : COMPRESSED GAS, N.O.S., (Nitrogen, Oxygen)
Class or Division : 2
Label(s) : 2.2
Marine Pollutant : No

Transport in bulk according to Annex II of Marpol and the IBC Code
For complete transportation information, contact customer service.

Further Information

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. The transportation information is not intended to convey all specific regulatory data relating to this material. For complete transportation information, contact customer service.

SECTION 15: Regulatory information

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

Country	Regulatory list	Notification
USA	TSCA	Included on Inventory.
EU	EINECS	Included on Inventory.
Canada	DSL	Included on Inventory.
Australia	AICS	Included on Inventory.
Japan	ENCS	Included on Inventory.
South Korea	ECL	Included on Inventory.
China	SEPA	Included on Inventory.
Philippines	PICCS	Included on Inventory.

Other Regulations

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the

SAFETY DATA SHEET

Version 2.0
Revision Date 14.09.2017

SDS Number 300000037900
Print Date 10.12.2019

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Regulation (EC) No 1272/2008 the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

15.2. Chemical safety assessment

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

SECTION 16: Other information

Ensure all national/local regulations are observed.

Hazard Statements:

H225 Highly flammable liquid and vapour.
H270 May cause or intensify fire; oxidiser.
H280 Contains gas under pressure; may explode if heated.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H340 May cause genetic defects
H350 May cause cancer
H372 Causes damage to organs through prolonged or repeated exposure

Indication of Method:

Gases under pressure Compressed gas. Contains gas under pressure; may explode if heated. Calculation method

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
ELINCS - European List of Notified Chemical Substances
CAS# - Chemical Abstract Service number
PPE - Personal Protection Equipment
Kow - octanol-water partition coefficient
DNEL - Derived No Effect Level
LC50 - Lethal Concentration to 50 % of a test population
LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)
NOEC - No Observed Effect Concentration
PNEC - Predicted No Effect Concentration
RMM - Risk Management Measure
OEL - Occupational Exposure Limit
PBT - Persistent, Bioaccumulative and Toxic
vPvB - Very Persistent and Very Bioaccumulative
STOT - Specific Target Organ Toxicity
CSA - Chemical Safety Assessment
EN - European Standard
UN - United Nations
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
IATA - International Air Transport Association
IMDG - International Maritime Dangerous Goods
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail

SAFETY DATA SHEET

Version 2.0

Revision Date 14.09.2017

SDS Number 300000037900

Print Date 10.12.2019

WGK - Water Hazard Class

Key literature references and sources for data:

ECHA - Guidance on the compilation of safety data sheets

ECHA - Guidance on the application of the CLP Criteria

ARIEL database
