Safety Data Sheet

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

0.9% n-butane // Air

Date of issue: 27/03/2018 Supersedes: Revision date: 27/03/2023 Version:

SDS reference:

Warning

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

1.1. Product identifier

Trade name : 0.9% n-butane // Air

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

Relevant identified uses : Industrial and professional. Perform risk assessment prior to use.
Contact supplier for more information on uses.

Uses advised against : Consumer use.

1.3. Details of the supplier of the safety data sheet

Company identification : Gasco
320 Scarlet Blvd, Oldsmar, Florida
34677, United States of America
www.gascogas.com

1.4. Emergency telephone number

Emergency telephone number : 1-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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)

- Storage : P410+P403 - Protect from sunlight. Store in a well-ventilated place.

Labelling according to Directive 67/548/EEC or 1999/45/EC

No labelling applicable

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]
Nitrogen	(CAS-No.) 7727-37-9 (EC-No.) 231-783-9 (EC Index-No.) (REACH-no) *1	78.2	Press. Gas (Comp.), H280
Oxygen	(CAS-No.) 7782-44-7 (EC-No.) 231-956-9 (EC Index-No.) 008-001-00-8 (REACH-no) *1	20.9	Ox. Gas 1, H270 Press. Gas (Comp.), H280
Butane n-	(CAS-No.) 106-97-8 (EC-No.) 203-448-7 (EC Index-No.) 601-004-00-0 (REACH-no) 01-2119474691-32	0.9	Flam. Gas 1, H220 Press. Gas (Liq.), 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 : Adverse effects not expected from this product.
- 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

: 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 : Exposure to fire may cause containers to rupture/explode.

Hazardous combustion products : Carbon monoxide.

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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

: Act in accordance with local emergency plan.

Stay upwind.

6.2. Environmental precautions

No additional information available

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.

Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.

Use only oxygen approved lubricants and oxygen approved sealings.

Avoid suck back of water, acid and alkalis.

Do not breathe gas.

Avoid release of product into atmosphere.

Safe handling of the gas receptacle : 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.

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

Butane n- (106-97-8)		
OEL : Occupational Exposure Limits		
Austria	TWA (AT) OEL 8h [mg/m³]	1900 mg/m³
	TWA (AT) OEL 8h [ppm]	800 ppm
	STEL (AT) OEL 15min [mg/m³]	3800 mg/m³
	STEL (AT) OEL 15min [ppm]	1600 ppm
	Regulatory reference	BGBl. II Nr. 186/2015
Belgium	TWA (BE) OEL 8h [ppm]	1000 ppm
	Regulatory reference	Koninklijk besluit/Arrêté royal 11/03/2002
Bulgaria	TWA (BG) OEL 8h [mg/m³]	1900 mg/m³
	Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа
Estonia	TWA (EE) OEL 8h [mg/m³]	1500 mg/m³
	TWA (EE) OEL 8h [ppm]	800 ppm
	Regulatory reference	Vabariigi Valitsuse 18. septembri 2001. a määruse nr 293
France	TWA (FR) OEL 8h [mg/m³]	1900 mg/m³

	TWA (FR) OEL 8h [ppm]	800 ppm
	Note (FR)	Valeurs recommandées/admises
	Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 984, 2012)
Germany	Local name	Butan
	TRGS 900 Occupational exposure limit value (mg/m³)	2400 mg/m³
	TRGS 900 Occupational exposure limit value (ppm)	1000 ppm
	Remark (TRGS 900)	DFG
	Regulatory reference (TRGS900)	TRGS900
Greece	TWA (GR) OEL 8h [mg/m³]	2350 mg/m³
	TWA (GR) OEL 8h [ppm]	1000 ppm
ACGIH	ACGIH STEL (ppm)	1000 ppm
	Regulatory reference	ACGIH 2017
Latvia	TWA (LV) OEL 8h [mg/m³]	300 mg/m³
	Regulatory reference	Ministru kabineta 2007.gada 15.maija noteikumiem Nr.325
Slovenia	TWA (SL) OEL 8h [mg/m³]	2400 mg/m³
	TWA (SL) OEL 8h [ppm]	1000 ppm
	Peak exposure limitation factor (SL)	4
	Regulatory reference	Uradni list RS, št. 102/2010 z dne 17.12.2010
Switzerland	STEL (CH) OEL 15min [mg/m³]	7600 mg/m³
	STEL (CH) OEL 15min [ppm]	3200 ppm
	TWA (CH) OEL 8h [mg/m³]	1900 mg/m³
	TWA (CH) OEL 8h [ppm]	800 ppm
	Remark (CH)	ZNS KT
	Regulatory reference	SUVA - Grenzwerte am Arbeitsplatz 2016
United Kingdom	WEL - LTEL - UK [mg/m³]	1450 mg/m³
	WEL - LTEL - UK [ppm]	600 ppm
	WEL - STEL - UK [mg/m³]	1810 mg/m³
	WEL - STEL - UK [ppm]	750 ppm
	Remark (WEL)	Carc (Capable of causing cancer and/or heritable genetic damage. See paragraphs 49–51), (only applies if Butane contains more than 0.1% of buta-1,3-diene)
	Regulatory reference	EH40. HSE
Denmark	TWA (DK) OEL 8h [mg/m³]	1200 mg/m³
	TWA (DK) OEL 8h [ppm]	500 ppm
	Regulatory reference	BEK nr 986 af 11/10/2012
Finland	TWA (FI) OEL 8h [ppm]	800 ppm
	STEL (FI) OEL 15min [ppm]	1000 ppm
	Huomautus (FI)	liite 4 (HAPPEA SYRJÄYTTÄMÄLLÄ TUKEHDUTTAVAT KAASUT)
	Regulatory reference	HTP-ARVOT 2014 (Sosiaali- ja terveysministeriö)
Hungary	TWA (HU) OEL 8h [mg/m3]	2350 mg/m³
	STEL (HU) OEL 15min [mg/m3]	9400 mg/m³
	Megjegyzések (HU)	IV.
Iceland	Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Ireland	OEL (IE)-(8-hour reference period) [ppm]	1000 ppm
	Regulatory reference	Code of Practice for the Chemical Agents Regulations 2016
Norway	TWA (NO) OEL 8h [mg/m³]	600 mg/m³
	TWA (NO) OEL 8h [ppm]	250 ppm
	Regulatory reference	Arbeidstilsynet. Forskrift, best.nr. 704
Poland	TWA (PL) OEL 8h [mg/m³]	1900 mg/m³
	STEL (PL) OEL 15min [mg/m³]	3000 mg/m³
	Regulatory reference	Dz.U. 2014 poz. 817
Portugal	STEL (PT) OEL 15min [ppm]	1000 ppm
	Regulatory reference	Norma Portuguesa NP 1796:2014

DNEL (Derived-No Effect Level) : None established.

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

8.2. Exposure controls

8.2.1. Appropriate engineering controls

: Systems under pressure should be regularily checked for leakages.
Ensure exposure is below occupational exposure limits (where available).
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 risk.

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

• Respiratory protection : Gas filters may be used if all surrounding conditions e.g. type and concentration of the contaminant(s) and duration of use are known.
Use gas filters with full face mask, where exposure limits may be exceeded for a short-term period, e.g. connecting or disconnecting containers.
Gas filters do not protect against oxygen deficiency.
Standard EN 14387 - Gas filter(s), combined filter(s) and full face mask - EN 136.

• Thermal hazards : None in addition to the above sections.

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:
Stenchant often added. Sweetish.

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

pH : Not applicable for gases and gas mixtures.

Melting point / Freezing point : Not applicable for gas mixtures.

Boiling point : Not applicable for gas mixtures.

Flash point : Not applicable for gases and gas mixtures.

Evaporation rate : Not applicable for gases and gas mixtures.

Flammability (solid, gas) : Non flammable.

Explosive limits : Non flammable.

Vapour density	: Not applicable.
Relative density, gas (air=1)	: Lighter or similar to air.
Partition coefficient n-octanol/water (Log Kow)	: Not applicable for gas mixtures.
Auto-ignition temperature	: Non flammable.
Decomposition temperature	: Not applicable.
Viscosity	: No reliable data available.
Explosive properties	: Not applicable.
Oxidising properties	: Not applicable.

9.2. Other information

Molar mass	: Not applicable for gas mixtures.
Other data	: None.

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

: Heating may cause an explosion.

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 toxicological effects

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.

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.

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.

Butane n- (106-97-8)	
EC50 48h - Daphnia magna [mg/l]	14.2 mg/l
EC50 72h - Algae [mg/l]	7.7 mg/l
LC50 96 h - Fish [mg/l]	24.1 mg/l

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. Other adverse effects

Other adverse effects : No known effects from this product.

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.

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.

Return unused product in original cylinder to supplier.

List of hazardous waste codes (from Commission Decision 2001/118/EC) : 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

UN-No. : 1950

14.2. UN proper shipping name

Transport by road/rail (ADR/RID) : AEROSOLS

Transport by air (ICAO-TI / IATA-DGR) : Aerosols, non-flammable

Transport by sea (IMDG) : AEROSOLS

14.3. Transport hazard class(es)

Labelling :

2.2 : Non-flammable, non-toxic gases.

Transport by road/rail (ADR/RID)

Class : 2

Classification code : 5A
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-D
Emergency Schedule (EmS) - Spillage : S-U

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) : P207.
LP02

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

Passenger and Cargo Aircraft : 203.
Cargo Aircraft only : 203.

Transport by sea (IMDG) : P207.
LP200

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 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

Restrictions on use : None.
Seveso Directive : 2012/18/EU (Seveso III) : Not covered.

National regulations

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

Water hazard class (WGK) : nwg - Non-hazardous to water

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.

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 - European 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

Training advice : None.

Further information : Classification using data from databases maintained by the European Industrial Gases Association (EIGA).

Classification in accordance with the calculation methods of Regulation (EC) 1272/2008 CLP.

Full text of H- and EUH-statements

Flam. Gas 1	Flammable gases, Category 1
Ox. Gas 1	Oxidising Gases, Category 1
Press. Gas (Comp.)	Gases under pressure : Compressed gas
Press. Gas (Liq.)	Gases under pressure : Liquefied gas
H220	Extremely flammable gas.
H270	May cause or intensify fire; oxidiser.
H280	Contains gas under pressure; may explode if heated.

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

Details given in this document are believed to be correct at the time of going to press.

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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