

**Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)**

Printed 11.04.2017  
revision 08.11.2016 (GB) Version 1.2

**Calibration gas, Test gas, H<sub>2</sub>S, NO<sub>2</sub>, CO, CO<sub>2</sub>, NH<sub>3</sub>, H<sub>2</sub>, SO<sub>2</sub>, CH<sub>4</sub>, C<sub>2</sub>H<sub>4</sub>, C<sub>3</sub>H<sub>8</sub>, C<sub>4</sub>H<sub>10</sub>, C<sub>4</sub>H<sub>8</sub>, C<sub>5</sub>H<sub>12</sub>, C<sub>6</sub>H<sub>14</sub>, THC, O<sub>2</sub>, N<sub>2</sub>-Bal [configured]**  
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**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1. Product identifier**

**Name of product** Calibration gas, Test gas, H<sub>2</sub>S, NO<sub>2</sub>, CO, CO<sub>2</sub>, NH<sub>3</sub>, H<sub>2</sub>, SO<sub>2</sub>, CH<sub>4</sub>, C<sub>2</sub>H<sub>4</sub>, C<sub>3</sub>H<sub>8</sub>, C<sub>4</sub>H<sub>10</sub>, C<sub>4</sub>H<sub>8</sub>, C<sub>5</sub>H<sub>12</sub>, C<sub>6</sub>H<sub>14</sub>, THC, O<sub>2</sub>, N<sub>2</sub>-Bal [configured]  
Prod-Nr various calibration gases in air (about 18% O<sub>2</sub>, N<sub>2</sub>-Bal.)  
- various, see Section 16

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

**Identified uses**

**Sector of uses [SU]**

SU20 - Health services  
SU2a - Mining (without offshore industries)  
SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen)  
SU0 - Other

**Product categories [PC]**

PC0 - Other

**Process categories [PROC]**

Professional:  
PROC0 - Other Process or activity:

**Article categories [AC]**

not applicable

**Article categories [AC]**

not applicable

**Environmental release categories [ERC]**

not applicable

**Remark**

no

**Uses advised against**

**Sector of uses [SU]**

not determined

**Product categories [PC]**

not determined

**Process categories [PROC]**

not determined

**Article categories [AC]**

not applicable

**Article categories [AC]**

not applicable

**Remark**

Do not use for inflating balloons.  
Do not use for medical-clinical purposes.  
Do not use for private purposes (household).

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**Recommended intended purpose(s)**

Gas mixture for the calibration of sensors.

**Effect of the substance / the mixture**

Gas mixture may contain toxic gases in low concentrations.  
The concentrations are usually below occupational exposure limits.

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

**Distributor**

Dräger Safety UK Ltd.  
Ullswater Close, Blyth Riverside Business Park, UK-NE24 4RG  
Blyth; Northumberland  
Phone +44 1670 352891, Fax +44 1670 352626  
E-Mail info@draeger.com  
Internet www.draeger.com

**Advice**

Dräger Environmental Management  
Phone +49 451 882 6297  
Fax +49 451 882 76297  
E-mail (competent person):  
sds@draeger.com

**1.4. Emergency telephone number**

**Emergency advice**

National Poisons Information Service, West Midlands Poisons  
Unit, City Hospital NHS Trust, Dudley Ro  
Phone (0) 12 15 07 55 88/9

**Manufacturer**

Dräger Safety AG & Co. KGaA  
Revalstr. 1, D-23560 Lübeck  
Phone +49 (0) 451/882-0, Fax +49 (0) 451/882-2080  
E-Mail info@draeger.com  
Internet www.draeger.com

**Advice**

Dräger Umweltmanagement  
Phone +49 (0) 451 / 882-6297  
Fax +49 (0) 451 / 882-76297  
E-mail (competent person):  
sds@draeger.com

**1.4. Emergency telephone number**

**Emergency advice**

Giftinformationszentrum Nord, Göttingen; Tel. (0551) 1 92 40  
Phone +49 (0) 451/ 882-2395 (Dräger Werkschutz)

**SECTION 2: Hazards identification**

**2.1. Classification of the substance or mixture**

**Classification according to 67/548/EEC or 1999/45/EC**

no

**R-phrases**

no

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### Additional hints

The preparation is not classified as hazardous according to Directive 1999/45/EC.

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

Hazard classes and Hazard Hazard Statements Classification procedure categories

Press. Gas H280

### Hazard statements for physical hazards

H280 Contains gas under pressure; may explode if heated.

### Hazard statements for health hazards

no

### Hazard statements for environmental hazards

no

### Additional hints

This mixture is classified as hazardous according to Regulation (EC) No 1272/2008 [GHS].

### 2.2. Label elements

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



GHS04

### Signal word

Warning

### Hazard statements for physical hazards

H280 Contains gas under pressure; may explode if heated.

### Hazard statements for health hazards

no

### Hazard statements for environmental hazards

no

### Precautionary Statements

#### General

P103 Read label before use.

#### Prevention

P202 Do not handle until all safety precautions have been read and understood.  
P233 Keep container tightly closed.

#### Response

P376 Stop leak if safe to do so.

#### Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
P410 + P403 Protect from sunlight. Store in a well-ventilated place.  
P412 Do not expose to temperatures exceeding 50°C/122°F.

#### Disposal

P501 Contents / container to properly dispose and recycle.

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### Supplemental Hazard information (EU)

#### Physical properties

no

#### Health properties

no

#### Environmental properties

no

#### Special rules for supplemental label elements for certain mixtures

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use.

#### Additional information

#### Special rules on packaging

no

#### Special rules for labelling of plant protection products

not applicable

#### Remark

no

### 2.3. Other hazards

#### Adverse physicochemical effects

Caution! Container under pressure.

#### Adverse human health effects and symptoms

No information available.

#### Adverse environmental effects

no

#### Other adverse effects

No information available.

#### Information pertaining to special dangers for human and environment

No information available.

#### Results of PBT and vPvB assessment

No data available

## SECTION 3: Composition/ information on ingredients

### 3.1. Substances

not applicable

### 3.2. Mixtures

#### Description

not applicable

#### Hazardous ingredients

CAS No	EC No	Name	[%-Vol]	Classification according to 67/548/EEC
74-82-8	200-812-7	methane	0 - 3	F+ R12
74-98-6	200-827-9	propane	0 - 5	F+ R12

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**Hazardous ingredients (continued)**

CAS No	EC No	Name	[%-Vol]	Classification according to 67/548/EEC
106-97-8	203-448-7	butane	0 - 1	F+ R12
10102-44-0	233-272-6	nitrogen dioxide	0 - 0,05	O R8; T+ R26; C R34
109-66-0	203-692-4	pentane	0 - 0,5	F+ R12; Xn R65; R66; R67; N R51-53
110-54-3	203-777-6	n-hexane	0 - 0,8	F R11; Repr.Cat.3 R62; Xn R65-48/20; Xi R38; R67; N R51-53
115-11-7	204-066-3	2-methylpropene	0 - 0,015	F+ R12
630-08-0	211-128-3	carbon-monoxide	0 - 0,5	F+ R12; Repr.Cat.1 R61; T R23-48/23
1333-74-0	215-605-7	hydrogen	0 - 2,2	F+ R12
7664-41-7	231-635-3	ammonia, anhydrous	0 - 0,05	R10; T R23; C R34; N R50
7782-44-7	231-956-9	oxygen	ca. 18	O R8
7783-06-4	231-977-3	hydrogen sulphide	0 - 0,01	F+ R12; T+ R26; N R50
74-85-1	200-815-3	ethylene	0 - 1,5	F+ R12; R67
124-38-9	204-696-9	carbon dioxide	0 - 20	
7727-37-9	231-783-9	Nitrogen	> 74	-
1972-08-3		tetrahydrocannabinol	0 < 0,0001	

CAS No	EC No	Name	[%-Vol]	Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]
74-82-8	200-812-7	methane	0 - 3	Flam. Gas 1, H220 / Press. Gas
74-98-6	200-827-9	propane	0 - 5	Flam. Gas 1, H220 / Press. Gas
106-97-8	203-448-7	butane	0 - 1	Flam. Gas 1, H220 / Press. Gas
10102-44-0	233-272-6	nitrogen dioxide	0 - 0,05	Press. Gas / Ox. Gas 1, H270 / Acute Tox. 2, H330 / Skin Corr. 1B, H314
109-66-0	203-692-4	pentane	0 - 0,5	Flam. Liq. 2, H225 / Asp. Tox. 1, H304 / STOT SE 3, H336 / Aquatic Chronic 2, H411
110-54-3	203-777-6	n-hexane	0 - 0,8	Flam. Liq. 2, H225 / Repr. 2, H361f / Asp. Tox. 1, H304 / STOT RE 2, H373 / Skin Irrit. 2, H315 / STOT SE 3, H336 / Aquatic Chronic 2, H411
115-11-7	204-066-3	2-methylpropene	0 - 0,015	Flam. Gas 1, H220 / Press. Gas
630-08-0	211-128-3	carbon-monoxide	0 - 0,5	Flam. Gas 1, H220 / Press. Gas / Repr. 1A, H360D / Acute Tox. 3, H331 / STOT RE 1, H372
1333-74-0	215-605-7	hydrogen	0 - 2,2	Flam. Gas 1, H220 / Press. Gas
7664-41-7	231-635-3	ammonia, anhydrous	0 - 0,05	Flam. Gas 2, H221 / Press. Gas / Acute Tox. 3, H331 / Skin Corr. 1B, H314 / Aquatic Acute 1, H400
7782-44-7	231-956-9	oxygen	ca. 18	Ox. Gas 1, H270 / Press. Gas
7783-06-4	231-977-3	hydrogen sulphide	0 - 0,01	Flam. Gas 1, H220 / Press. Gas / Acute Tox. 2, H330 / Aquatic Acute 1, H400
74-85-1	200-815-3	ethylene	0 - 1,5	Flam. Gas 1, H220 / Press. Gas / STOT SE 3, H336
124-38-9	204-696-9	carbon dioxide	0 - 20	
7727-37-9	231-783-9	Nitrogen	> 74	
1972-08-3		tetrahydrocannabinol	0 < 0,0001	Repr. Cat 2, H361d / Acut Tox. Cat 4, H302

**REACH**

CAS No	Name	REACH registration number
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**REACH (continued)**

CAS No	Name	REACH registration number
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7727-37-9 Nitrogen -

**Additional advice**

no

**Labelling for contents according to regulation (EC) No 648/2004, annex VII**  
not applicable

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

no

**In case of inhalation**

Remove the casualty into fresh air and keep him immobile.  
Ensure of fresh air.

**In case of skin contact**

No special measure necessary.

**In case of eye contact**

not determined

**In case of ingestion**

not applicable

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

**Physician's information / possible symptoms**

No symptoms known so far.

**Physician's information / possible dangers**

No information available.

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

**Treatment (Advice to doctor)**

Treat symptoms.

If necessary, give oxygen.

**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

**Suitable extinguishing media**

Fire-extinguishing activities according to surrounding.

ABC powder

Carbon dioxide

Water spray jet

**Unsuitable extinguishing media**

no

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**5.2. Special hazards arising from the substance or mixture**  
No information available.

**5.3. Advice for firefighters**  
**Special protective equipment for fire-fighters**  
Use breathing apparatus with independent air supply.

**Additional information**  
Cool endangered containers with water spray jet.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**  
**For non-emergency personnel**  
Ensure adequate ventilation.  
Keep away sources of ignition.  
Pay attention to extension of gas especially at ground (heavier than air) and in direction of the wind.

**For emergency responders**  
Ensure adequate ventilation.

**6.2. Environmental precautions**  
Suppress gases/vapours/mists with water spray jet

**6.3. Methods and material for containment and cleaning up**  
Suck off by room ventilation.

**Additional Information**  
No known toxicological effects from this product.  
No known ecological damage caused by this product.

**6.4. Reference to other sections**  
Safe handling: see section 7  
Disposal: see section 13

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**  
**Advice on safe handling**  
Care for thoroughly room ventilation, if necessary use in well ventilated area with local exhaust ventilation at workplace.  
No special measures necessary if used correctly.  
Open and handle container with care!  
Use only in well-ventilated areas.

**General protective measures**  
Do not inhale gases.

**Hygiene measures**  
At work do not eat, drink and smoke.  
Work in rooms with good ventilation.  
Wash hands before breaks and after work.

**Advice on protection against fire and explosion**  
Keep away from sources of ignition - No smoking  
The product is not combustible, but supports burning.

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Pay attention to general rules of internal fire prevention.  
Avoid effect of heat.

**7.2. Conditions for safe storage, including any incompatibilities**  
**Requirements for storage rooms and vessels**  
Keep in closed original container.  
Ventilate store-rooms thoroughly.

**Advice on storage compatibility**  
Do not store with chemicals.  
Do not store together with oxidizing agents.  
Store only in original container at cool and aired place and at distance to acids and reducing materials.

**Further information on storage conditions**  
Keep container tightly closed, store at cool and aired place, open and handle carefully.  
Protect compressed gas-bottles from falling down.  
Storage temperature may not exceed 50°C (=122°F).

**Information on storage stability**  
In enclosed original container and at storage temperature of 25°C maximum product keeps stable for at least 12 months.

**Storage group** 2A  
**Fire class** A

**7.3. Specific end use(s)**  
**Recommendation(s) for intended use**  
not determined

**Particular industry solution(s) for intended use**  
not applicable

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**  
**Ingredients with occupational exposure limits to be monitored**

CAS No	Name	Code	[mg/m3]	[ppm]	Remark
7664-41-7	Ammonia	8 hours	18	25	UK
		Short-term	25	35	
10102-44-0	nitrogen dioxide	8 hours		0,2	EU
10102-44-0	nitrogen dioxide	8 hours	[5,7]	[3]	UK
		Short-term	[9,6]	[5]	
630-08-0	carbon-monoxide	8 hours	35	30	UK
		Short-term	232	200	
7783-06-4	hydrogen sulphide	8 hours	7	5	UK
		Short-term	14	10	
124-38-9	carbon dioxide	8 hours	9000	5000	EU
124-38-9	carbon dioxide	8 hours	9150	5000	UK
		Short-term	27400	15000	
7664-41-7	Ammonia	EU, 8 hours	14	20	OEL
		Short-term	36	50	

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**Ingredients with occupational exposure limits to be monitored (continued)**

CAS No	Name	Code	[mg/m3]	[ppm]	Remark
109-66-0	pentane	8 hours	3000	1000	EU
109-66-0	pentane	8 hours	1800	600	UK
109-66-0	pentane	8 hours	3000	1000	IR
74-85-1	ethylene	8 hours		200	IR
106-97-8	butane	8 hours	1450	600	UK
		Short-term	1810	750	

**Indicative occupational exposure limit values (91/322/EEC, 2000/39/EC, 2004/37/EC, 2006/15/EC or 2009/161/EU)**

CAS No	Name	Code	[mg/m3]	[ppm]	Remark
109-66-0	pentane	8 hours	3000	1000	
110-54-3	n-hexane	8 hours	72	20	
124-38-9	carbon dioxide	8 hours	9000	5000	
7664-41-7	ammonia, anhydrous	8 hours	14	20	
		Short-term	36	50	
7783-06-4	Hydrogen sulphide	8 hours	7	5	
		Short-term	14	10	

**biological limits (TRGS 903)**

CAS No	Name	Parameter	BGW	Examination material	Test date
110-54-3	Hexan (n-Hexan)	2,5-Hexandion plus 4,5-Dihydroxy-2-hexanon (nachHydrolyse)	5 mg/l	U	b
630-08-0	Kohlenstoffmonoxid (Kohlenmonoxid)	CO-Hb	5 % ; Ableitung des BGW als Höchstwert wegen akut toxischer Effekte / Gesonderte Bewertung für Raucher	B	b

**Additional advice**  
no

**8.2. Exposure controls**

**Respiratory protection**

In case of insufficient ventilation or long-term effect use breathing apparatus.  
Multi-purpose filter ABEK

**Hand protection**

Protective gloves  
Rubber gloves  
Leather gloves  
Plastic gloves

**Eye protection**

safety goggles with side protection

**Other protection measures**

Light protective clothing.

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**Thermal hazards**

not known

**Limitation and surveillance of the environment**

Observe the expiry date.

**Appropriate engineering controls**

not determined

**SECTION 9: Physical and chemical properties**

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

<b>Appearance</b>	<b>Colour</b>	<b>Odour</b>
compressed gas	colourless	odorless or characteristic

**Odour threshold**

No data available

**Important health, safety and environmental information**

	Value	Temperature	at	Method	Remark
<b>pH value</b>	not applicable	not applicable	not applicable	not applicable	not applicable
<b>Acid number</b>	not applicable			not applicable	not applicable
<b>boiling point</b>	ca. -195 °C		1 bar	not determined	no
<b>melting point</b>	No data available			not determined	no
<b>Flash point</b>	not applicable			not applicable	not applicable
<b>Vapourisation rate</b>	not determined				
<b>Flammable (solid)</b>	not applicable			not applicable	not applicable
<b>Flammability (gas)</b>	not determined			not applicable	not applicable
<b>Ignition temperature</b>	not determined			not applicable	not applicable
<b>Self ignition temperature</b>	not applicable			not applicable	not applicable
<b>Lower explosion limit</b>	No information available.			not applicable	no
<b>Upper explosion limit</b>	No information available.			not applicable	no
<b>Vapour pressure</b>	not applicable	20 °C		not applicable	no
<b>Relative density</b>	ca. 1 g/cm3	ca. -195 °C	ca. 1 bar	not determined	no
<b>Bulk density</b>	not applicable			not applicable	no

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	Value	Temperature	at	Method	Remark
<b>Vapour density</b>	ca. 1	20 °C	1 bar	not determined	no
<b>Solubility in water</b>	No data available	ca. 20 °C	ca. 1 bar	not determined	no
<b>Solubility/other</b>	not determined	not determined	not determined	not determined	no
<b>Partition coefficient n-octanol/water (log P O/W)</b>	not determined	not determined		not determined	no
<b>Decomposition temperature</b>	No data available			not applicable	no
<b>Viscosity not determined</b>	not determined	not determined		not applicable	no
<b>Viscosity not determined</b>	not determined	not determined		not applicable	no
<b>Solvent separation test</b>	not determined			not determined	no
<b>Solvent content</b>	not applicable			not applicable	no
<b>Water content</b>	not determined			not determined	no
<b>Solids content</b>	not applicable			not determined	no
<b>Combustion value</b>	not applicable				
<b>Sensitiveness to impact</b>	no			not applicable	
<b>Oxidising properties</b> No data available					
<b>Explosive properties</b> not determined					

**9.2. Other information**

Gas mixture may contain toxic gases in low concentrations.  
The concentrations are usually below occupational exposure limits.

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

No hazardous reactions known.

**10.2. Chemical stability**

not determined

**10.3. Possibility of hazardous reactions**

not determined

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**10.4. Conditions to avoid**  
Danger of bursting container.

**10.5. Incompatible materials**  
**Substances to avoid**  
No data available

**10.6. Hazardous decomposition products**  
Gas mixture may contain toxic gases in low concentrations, which could be released.  
Decomposition products of the respective test gas components.

**Thermal decomposition**

Method not determined

Remark not determined

**Additional information**  
no

**SECTION 11: Toxicological information**

**11.1. Information on toxicological effects**

**Acute toxicity/Irritation/Sensitization**

	Value/Validation	Species	Method	Remark
<b>LD50 acute oral</b>	not determined	not determined	not determined	no
<b>LD50 acute dermal</b>	not determined	not determined	not determined	no
<b>LC50 acute inhalation</b>	not determined	not determined	not determined	no
<b>Skin irritation</b>	not determined	not determined	not determined	no
<b>Eye irritation</b>	not determined	not determined	not determined	no
<b>Skin sensitization</b>	not determined	not determined	not determined	no
<b>Sensitization respiratory system</b>	not determined	not determined	not determined	no

**Subacute Toxicity - Carcinogenicity**

	Value	Species	Method	Validation
<b>Subacute Toxicity</b>	not determined	not determined	not determined	no
<b>Subchronic Toxicity</b>	not determined	not determined	not determined	no
<b>Chronic Toxicity</b>	not determined	not determined	not determined	no

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C5H12, C6H14, THC, O2, N2-Bal [configured]  
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	Value	Species	Method	Validation
<b>Mutagenicity</b>	not determined	not determined	not determined	no
<b>Reproduction-Toxicity</b>	not determined	not determined	not determined	no
<b>Carcinogenicity</b>	not determined	not determined	not determined	no
<b>Specific target organ toxicity (single exposure)</b> No data available				
<b>Specific target organ toxicity (repeated exposure)</b> No data available				
<b>Aspiration hazard</b> not applicable				
<b>Toxicity test (Additional information)</b> No information available.				
<b>Experiences made from practice</b> No information available.				
<b>Additional information</b> No known toxicological effects from this product. No toxic dates available. Mixture not tested. The product has not been tested. The information is derived from the properties of the individual components.				

**SECTION 12: Ecological information**

**12.1. Toxicity**

**Ecotoxicological effects**

	Value	Species	Method	Validation
<b>Fish</b>	not determined	not determined	not determined	no
<b>Daphnia</b>	not determined	not determined	not determined	no
<b>Algae</b>	not determined	not determined	not determined	no
<b>Bacteria</b>	not determined	not determined	not determined	no

**12.2. Persistence and degradability**

	Elimination rate	Method of analysis	Method	Validation
<b>Physico-chemical degradability</b>	not determined	not determined	not determined	no
<b>Biological degradability</b>	not determined	not determined	not determined	no
<b>Degradability</b>	not determined	not determined	not determined	no
<b>Biological eliminability</b>	not determined	not determined	not determined	no

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	Elimination rate	Method of analysis	Method	Validation
<b>Degradability according to WRMG</b>	not determined	not determined	not determined	no
<b>12.3. Bioaccumulative potential</b> not determined				
<b>12.4. Mobility in soil</b> not determined				
<b>12.5. Results of PBT and vPvB assessment</b> No data available				
<b>12.6. Other adverse effects</b> not determined				
<b>Behaviour in sewage plant</b> not determined				

**Respiration inhibition of activated sludge**

	Value	Method	Remark
<b>EC 50</b>	not determined	not determined	no

**Additional ecological information**

	Value	Method	Remark
<b>OC</b>	not determined	not determined	no
<b>COD</b>	not determined	not determined	no
<b>BOD 99.40.n.b.</b>	not determined	not determined	no
<b>AOX</b>	not determined		

**Contains following heavy metals and compounds of the 76/464/EWG**  
not applicable

**General regulation**

No known ecological damage caused by this product.  
If appropriate application no interferences in sewage treatment plants.  
Ecological dates are not available.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Waste code No.** 16 05 05  
**Name of waste** gases in pressure containers other than those mentioned in 16 05 04

**Recommendations for the product**

Remove in accordance with local official regulations.

**Recommendations for packaging**

Totally emptied packaging may be taken for recycling.

**Recommended cleansing agent**

not applicable

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**General information**  
no

**SECTION 14: Transport information**

	ADR/RID	IMDG	IATA-DGR
<b>14.1. UN number</b>	1956	1956	1956
<b>14.2. UN proper shipping name</b>	Compressed gas, n.o.s. (Stickstoff, Sauerstoff)	Compressed gas, n.o.s. (Nitrogen, Oxygen)	Compressed gas, n.o.s. (Nitrogen, Oxygen)
<b>14.3. Transport hazard class(es)</b>	2.2	2.2	2.2
<b>14.4. Packing group</b>	./.	./.	./.
<b>14.5. Environmental hazards</b>	No	No	No

**14.6. Special precautions for user**  
no

**14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**  
not applicable

**Land and inland navigation transport ADR/RID**

Hazard label(s) 2.2  
tunnel restriction code D/E  
Special provisions P200  
Classification code 1A

**Transport/further information**  
no

**SECTION 15: Regulatory information**

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

**Authorizations**  
not applicable

**Application restrictions**  
No information available.

**Other regulations (EU)**  
No information available.

**VOC standard**

**Remark**  
not applicable

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**National regulations**

**Restriction of occupation**  
no

**Other regulations, restrictions and prohibition regulations**

To observe: TRG 280 "General demands for gas pressure vessels; operating with gas pressure vessels"  
To observe: TRG 101 "Gases"  
UVV "Gases" (VBG 61)  
ZH 1/119 "Guidelines for Laboratories"  
ZH 1/220 "Regulations on Hazardous Materials"

**Water hazard class** - self-classification  
nwh - not water hazardous

**Technical instruction air remarks**  
not applicable

**Decree for case of interference/ remarks** Accident decree, addendum II: not named.

**15.2. Chemical Safety Assessment**

Chemical safety assessments for substances in this mixture were not carried out.

**SECTION 16: Other information**

**Training advice**  
not determined

**Recommended uses and restrictions**  
National and local regulations concerning chemicals shall be observed.

**Further information**

Refer to product information paper.  
Partno. 6810987 (Test gas 0.9 Vol.-% n-C4H10 in Luft / air)  
Partno. 6812784 (Test gas 1,35 Vol.-% C2H4 in Luft / air).  
Partno. 6810988 (Test gas 0.48 Vol.-% n-C6H14 in Luft / air).  
Partno. 6810687 (Test gas 100 ppm i-C4H8 in Luft / air).  
Partno. 6811629 (Test gas 100 ppm i-C4H8 in Luft / air).  
Partno. 6812383 (Test gas 500 ppm CO2 in Luft / air).  
Partno. 6810391 (Test gas 2.5 Vol.-% CO2 in Luft / air).  
Partno. 6811357 (Test gas 20 Vol.-% CO2 in Luft / air).  
Partno. 6811117 (Test gas 50 ppm CO in Luft / air).  
Partno. 6811354 (Test gas 250 ppm CO in Luft / air).  
Partno. 6812574 (Test gas 50 ppm CO, 18 Vol.-% O2 in N2).  
Partno. 6812963 (Test gas 100 ppm CO, 18 Vol.-% O2 in N2).  
Partno. 6812104 (Test gas 2.5 Vol.-% CH4 in Luft / air).  
Partno. 6810389 (Test gas 2 Vol.-% CH4 in Luft / air).  
Partno. 6811116 (Test gas 2 Vol.-% CH4, 18 Vol.-% O2 in N2).  
Partno. 6812152 (Test gas 0.9 Vol.-% C3H8, 18 Vol.-% O2 in N2).  
Partno. 6812153 (Test gas 0.4 Vol.-% n-C5H12, 18 Vol.-% O2 in N2).  
Partno. 6812116 (Test gas 25 ppm H2S, 100 ppm CO, 0.45 Vol.-% n-C5H12 in Luft / air).  
Partno. 6811646 (Test gas 2.2 Vol.-% CH4, 18 Vol.-% O2 in N2).  
Partno. 6811647 (Test gas 2.2 Vol.-% CH4, 15 ppm H2S, 18 Vol.-% O2 in N2).  
Partno. 6812573 (Test gas 10 ppm H2S, 50 ppm CO, 18 Vol.-% O2 in N2).  
Partno. 6813098 (Test gas 25 ppm H2S, 100 ppm CO, 2.5 Vol.-% CH4, 18 Vol.-% O2 in N2).



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Partno. 6811130 (Test gas 15 ppm H2S, 50 ppm CO, 2.5 Vol.-% CH4, 18 Vol.-% O2 in N2).  
Partno. 6812375 (Test gas 15 ppm H2S, 50 ppm CO, 2.5 Vol.-% CH4, 18 Vol.-% O2 in N2).  
Partno. 6811131 (Test gas 15 ppm H2S, 2 Vol.-% CO2, 2.5 Vol.-% CH4, 18 Vol.-% O2 in N2).  
Partno. 6812376 (Test gas 15 ppm H2S, 2 Vol.-% CO2, 2.5 Vol.-% CH4, 18 Vol.-% O2 in N2).  
Partno. 6811132 (Test gas 15 ppm H2S, 50 ppm CO, 2 Vol.-% CO2, 2.5 Vol.-% CH4, 18 Vol.-% O2 in N2).  
Partno. 6813099 (Test gas 5 ppm NO2, 50 ppm CO, 2 Vol.-% CO2, 2.5 Vol.-% CH4, 18 Vol.-% O2 in N2).  
Partno. 6812377 (Test gas 15 ppm H2S, 50 ppm CO, 2 Vol.-% CO2, 2.5 Vol.-% CH4, 18 Vol.-% O2 in N2).  
Partno. 6812778 (Test gas 15 ppm H2S, 50 ppm CO, 2 Vol.-% CO2, 0.4 Vol.-% C3H8, 18 Vol.-% O2 in N2).  
Partno. 6811835 (Test gas 15 ppm H2S, 50 ppm CO, 2 Vol.-% CO2, 0.45 Vol.-% n-C5H12, 18 Vol.-% O2 in N2).  
Partno. 6811905 (Test gas 50 ppm CO, 2 Vol.-% CO2, 2.5 Vol.-% CH4, 18 Vol.-% O2 in N2).  
Partno. 6813100 (Test gas 15 ppm H2S, 50 ppm CO, 18 Vol.-% O2 in N2).  
Partno. 6813101 (Test gas 50 ppm NH3, 50 ppm CO, 18 Vol.-% O2 in N2).  
Partno. 6813103 (Test gas 10 ppm NO2, 50 ppm CO, 2.5 Vol.-% CH4, 18 Vol.-% O2 in N2).  
Partno. 6810761 (Test gas 0.75 Vol.-% n-C5H12 in Luft / air)..  
Partno. 6813237 (Test gas 0,6 Vol.-% C3H8 in Luft / air).  
Partno. 6813238 (Test gas 0,1 Vol.-% C3H8 in Luft / air).  
Partno. 6812389 (Test gas 0.4 Vol.-% C3H8 in Luft / air).  
Partno. 6812788 (Test gas 0.75 Vol.-% C3H8 in Luft / air).  
Partno. 6810390 (Test gas 0.9 Vol.-% C3H8 in Luft / air).  
Partno. 6811118 (Test gas 0.9 Vol.-% C3H8 in Luft / air).  
Partno. 6813239 (Test gas 20,9 Vol.-% O2 in N2, Zero Air, < 1 ppm THC).  
Partno. 6811952 (Test gas 5 ppm NO2 in Luft).  
Partno. 6810388 (Test gas 2 Vol.-% H2 in Luft / air).  
Partno. 6811955 (Test gas 1000 ppm H2 in Luft / air).  
Partno. 4594644 (Test gas 3500 ppm CO in air).  
Partno. 4594594, 4594635 (Test gas CH4 <2,5%, 100 ppm CO in air).  
Sachnummer 6813758 (Kalibriergas 4 Vol.-% O2 in N2)  
Sachnr. 6813696(Kalibriergas 50 ppm CO, 10 ppm SO2, 18 Vol.-% O2 in N2).  
Sachnr. 6814027 (Kalibriergas 0.75 Vol.-% n-C5H12, 50 ppm CO, 18 Vol.-%O2 in N2).  
Sachnr. 6813806 (Kalibriergas 15 ppm H2S, 50 ppm CO, 2 Vol.-% CO2, 0.45 Vol.-% n-C5H12, 18 Vol.-% O2 in N2)  
Sachnr. 6813759 (Kalibriergas 15 ppm H2S, 100 ppm CO, 2.2 Vol.-% CH4, 18 Vol.-% O2 in N2).  
Sachnr. 5239065 (Kalibriergas 0,3 Vol.-% CO2 in Luft / air).  
Sachnr. 6814028 (Kalibriergas 25 ppm H2S, 100 ppm CO, 2.5 Vol.-% CH4, 18 Vol.-% O2 in N2)

The information contained herein is based on the state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.  
Indication of changes: "!" = Data changed compared with the previous version.

Indication of changes: "!" = Data changed compared with the previous version. Previous version: 1.1

**Sources of key data used**  
not determined

**Wording of the R/H-phrases specified in chapter 3 (not the classification of the mixture!)**

R 10 Flammable.  
R 11 Highly flammable.  
R 12 Extremely flammable.  
R 23 Toxic by inhalation.  
R 26 Very toxic by inhalation.  
R 34 Causes burns.  
R 38 Irritating to skin.  
R 48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.  
R 48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.  
R 50 Very toxic to aquatic organisms.  
R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R 61 May cause harm to the unborn child.

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R 62 Possible risk of impaired fertility.  
R 65 Harmful: may cause lung damage if swallowed.  
R 66 Repeated exposure may cause skin dryness or cracking.  
R 67 Vapours may cause drowsiness and dizziness.  
R 8 Contact with combustible material may cause fire.

H220 Extremely flammable gas.  
H221 Flammable gas.  
H225 Highly flammable liquid and vapour.  
H270 May cause or intensify fire; oxidiser.  
H302 Harmful if swallowed.  
H304 May be fatal if swallowed and enters airways.  
H314 Causes severe skin burns and eye damage.  
H315 Causes skin irritation.  
H330 Fatal if inhaled.  
H331 Toxic if inhaled.  
H336 May cause drowsiness or dizziness.  
H360D May damage fertility or the unborn child (state specific effect if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).  
H361d Suspected of damaging fertility or the unborn child (state specific effect if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).  
H361f Suspected of damaging fertility or the unborn child (state specific effect if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).  
H372 Causes damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).  
H373 May cause damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).  
H400 Very toxic to aquatic life.  
H411 Toxic to aquatic life with long lasting effects.