

Safety Data Sheet 50018MSA

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Date of issue: 07/09/2014 Revision date: 04/01/2016 Version: 1.2

SECTION 1: Identification of the sub	stance/mixture and of the company/undertaking
1.1. Product identifier	
Product form	: Mixture
Product name	: Oxygen (0.0015-23.5), Methane (0.0005-2.5%), Carbon Monoxide (0.001-1.0%), Hydrogen Sulfide (0.001-0.025%) in Nitrogen Balance
MSA P/N	: 711058, 711076, 804770, 813720, 814349, 814559, 10045035, 10048280, 10048788, 10048790,10048890, 10050744, 10125695, 10150595, 10150620
1.2. Relevant identified uses of the subs	tance or mixture and uses advised against
Use of the substance/mixture	: Test gas/Calibration gas.
1.3. Details of the supplier of the safety	data sheat
Manufacturer: Calgaz, divison of Air Liquide 821 Chesapeake Drive Cambridge, MD 21613	
U.S. Supplier Mine Safety Appliances Company Cranberry Township Pennsylvania U.S.A. 16066	
1-800-MSA-2222 www.msanet.com/prism	
1.4. Emergency telephone number	
Emergency number	: CHEMTREC: 1-800-424-9300 Internationally: 1-703-527-3887
SECTION 2: Hazards identification	
2.1. Classification of the substance or m	ixture
GHS-US classification	
Compressed gas H280 Repr. 1A H360 STOT RE 1 H372	
2.2. Label elements	
GHS-US labelling	
Hazard pictograms (GHS-US)	: GHS04 GHS08
Signal word (GHS-US)	: Danger
Hazard statements (GHS-US)	 H280 - Contains gas under pressure; may explode if heated H360 - (Inhalation) H372 - Causes damage to organs (CNS) through prolonged or repeated exposure (Inhalation) CGA-HG10 - Asphyxiating even with adequate oxygen
Precautionary statements (GHS-US)	 P271 - Use only outdoors or in a well-ventilated area P201 - Obtain special instructions before use P202 - Do not handle until all safety precautions have been read and understood P260 - Do not breathe gas P264 - Wash thoroughly after handling P270 - Do not eat, drink or smoke when using this product P280 - Wear eye protection, protective clothing

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

: None.

P405 - Store locked up
P501 - Dispose of contents/container in accordance with local/regional/national/international
regulations
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)
CGA-PG05 - Use a back flow preventive device in the piping
CGA-PG06 - Close valve after each use and when empty
CGA-PG10 - Use only with equipment rated for cylinder pressure
CGA-PG14 - Approach suspected leak area with caution
CGA-PG21 - Open valve slowly
P403 - Store in a well-ventilated place

2.3. Other hazards

Other hazards not contributing to the classification

2.4. Unknown acute toxicity (GHS-US) No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

Full text of H-phrases: see section 16

3.2. Mixture			
Name	Product identifier	%	GHS-US classification
Nitrogen	(CAS No) 7727-37-9	72.975 - 99.9965	Compressed gas, H280
Oxygen	(CAS No) 7782-44-7	0.0015 - 23.5	Ox. Gas 1, H270 Compressed gas, H280
Methane	(CAS No) 74-82-8	0.0005 - 2.5	Flam. Gas 1, H220 Compressed gas, H280
Carbon monoxide	(CAS No) 630-08-0	0.0005 - 1	Flam. Gas 1, H220 Compressed gas, H280 Acute Tox. 3 (Inhalation:gas), H331 Repr. 1A, H360 STOT RE 1, H372
Hydrogen sulfide	(CAS No) 7783-06-4	0.001 - 0.025	Flam. Gas 1, H220 Liquefied gas, H280 Acute Tox. 2 (Inhalation:gas), H330 STOT SE 3, H335

SECTION 4: First aid measures	
4.1. Description of first aid measures	
First-aid measures after inhalation	: Adverse effects not expected from this product. If you feel unwell, seek medical advice.
First-aid measures after skin contact	: Adverse effects not expected from this product.
First-aid measures after eye contact	: Adverse effects not expected from this product.
First-aid measures after ingestion	: Ingestion is not considered a potential route of exposure.
4.2. Most important symptoms and effect	ts, both acute and delayed
Symptoms/injuries after inhalation	 Not expected to present a significant inhalation hazard under anticipated conditions of normal use.
Symptoms/injuries after skin contact	: Adverse effects not expected from this product.
Symptoms/injuries after eye contact	: Adverse effects not expected from this product.
Symptoms/injuries after ingestion	: Ingestion is not considered a potential route of exposure.
Symptoms/injuries upon intravenous administration	: Not known.
Chronic symptoms	: Adverse effects not expected from this product.
4.3. Indication of any immediate medica	attention and special treatment needed

If you feel unwell, seek medical advice. If breathing is difficult, give oxygen. Obtain medical attention if breathing difficulty persists.

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 5: Eirofighting moscures	
SECTION 5: Firefighting measures	
5.1. Extinguishing media	· Non flammable gas. Line extinguishing modia enprendiate for ourseunding fire
Suitable extinguishing media	: Non-flammable gas. Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	: Do not use water jet to extinguish.
5.2. Special hazards arising from the s	
Explosion hazard	: Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.
Reactivity	: No reactivity hazard other than the effects described in sub-sections below.
5.3. Advice for firefighters	
Firefighting instructions	: Exercise caution when fighting any chemical fire. In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters.
SECTION 6: Accidental release me	asures
6.1. Personal precautions, protective e	equipment and emergency procedures
General measures	: Try to stop release. Ensure adequate ventilation. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
6.1.1. For non-emergency personnel	
Protective equipment	: Wear protective equipment consistent with the site emergency plan.
Emergency procedures	: Escape the danger area by the closest safe route. Close doors and windows of adjacent premises. Keep containers closed. Mark the danger area. Seal off low-lying areas. Keep upwind.
6.1.2. For emergency responders	
Protective equipment	: Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Equip cleanup crew with proper protection.
Emergency procedures	: Evacuate and limit access. Ventilate area.
6.2. Environmental precautions	
Stop leak if safe to do so.	
6.3. Methods and material for containr	nent and cleaning up
For containment	: Stop leak if safe to do so.
Methods for cleaning up	: Dispose of this material and its container in accordance with local regulations.
6.4. Reference to other sections	
See also Sections 8 and 13.	
SECTION 7: Handling and storage	
7.1. Precautions for safe handling	
Additional hazards when processed	: Pressurized container: Do not pierce or burn, even after use. Use equipment rated for cylinder pressure.
Precautions for safe handling	 Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area.
Hygiene measures	: Do not eat, drink or smoke when using this product.
7.2. Conditions for safe storage, include	ding any incompatibilities
Technical measures	: None known.
Storage conditions	: Do not expose to temperatures exceeding 52°C (125°F). Keep container closed when not in use. Protect cylinder from physical damage. Store in well ventilated area. Store locked up.
Incompatible products	: None known.
Incompatible materials	: Flammable materials.
7.3. Specific end use(s)	
None.	

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 8: Exposure co	
.1. Control parameters	
Nitrogen (7727-37-9)	
Methane (74-82-8)	
USA ACGIH	ACGIH TWA (ppm) 1000 ppm
Hydrogen sulfide (7783-06-4)	
	ACGIH TWA (ppm) 1 ppm
	ACGIH STEL (ppm) 5 ppm
USA OSHA	OSHA PEL (Ceiling) (ppm) 20 ppm
Carbon monoxide (630-08-0)	
	ACGIH TWA (ppm) 25 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³) 55 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm) 50 ppm
.2. Exposure controls	
Appropriate engineering controls	 Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Oxygen detectors should be used when asphyxiating gases ma be released. Consider work permit system e.g. for maintenance activities.
land protection	: Wear working gloves when handling gas containers. 29CFR 1910.138: Hand Protection.
Eye protection	: Wear safety glasses with side shields. 29 CFR 1910.133: Eye and Face Protection.
Skin and body protection	: Wear suitable protective clothing, e.g lab coats, coveralls or flame resistant clothing.
nan and body proteotion	
Respiratory protection	: See sections 5 & 6.
•••	See sections 5 & 6.None necessary.
Respiratory protection	None necessary.Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for
Respiratory protection Thermal hazard protection	: None necessary.
Respiratory protection Thermal hazard protection Environmental exposure controls Other information	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection.
Respiratory protection Thermal hazard protection Environmental exposure controls Other information	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection.
Respiratory protection Thermal hazard protection Environmental exposure controls Other information	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection.
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and 1. Information on basic p	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection.
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and 1. Information on basic pony Physical state	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection.
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and 1. Information on basic pro- Physical state Suppearance	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection.
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and 1. Information on basic p Physical state Appearance Molecular mass	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. Chemical properties Gas Clear, colorless gas. Not applicable for gas-mixtures.
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and 1. Information on basic p Physical state Appearance Molecular mass Colour	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. I chemical properties Gas Clear, colorless gas. Not applicable for gas-mixtures. No data available
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and I. Information on basic p Physical state Appearance Molecular mass Solour Odour	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. I chemical properties Gas Clear, colorless gas. Not applicable for gas-mixtures. No data available No data available
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and Altor Information on basic pro- Physical state Appearance Molecular mass Colour Odour threshold	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. Chemical properties Gas Clear, colorless gas. Not applicable for gas-mixtures. No data available No data available Odour threshold is subjective and inadequate to warn for overexposure. Not applicable for gas-mixtures.
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and 1. Information on basic pro- Physical state Appearance Molecular mass Colour Odour Odour threshold H	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. Chemical properties Gas Clear, colorless gas. Not applicable for gas-mixtures. No data available Odour threshold is subjective and inadequate to warn for overexposure. Not applicable for gas-mixtures. Not applicable for gas-mixtures.
Respiratory protection Thermal hazard protection Environmental exposure controls Other information ECTION 9: Physical and A. Information on basic pro- Physical state Appearance Molecular mass Colour Odour Dodour Dodour threshold H Relative evaporation rate (butylac	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. Chemical properties Gas Clear, colorless gas. Not applicable for gas-mixtures. No data available Odour threshold is subjective and inadequate to warn for overexposure. Not applicable for gas-mixtures. Not applicable for gas-mixtures.
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and I. Information on basic p Physical state Appearance Molecular mass Colour Odour Odour threshold H Relative evaporation rate (butylac Relative evaporation rate (ether=1)	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. Chemical properties Gas Clear, colorless gas. Not applicable for gas-mixtures. No data available Odour threshold is subjective and inadequate to warn for overexposure. Not applicable for gas-mixtures. No tapplicable for gas-mixtures. Not applicable for gas-mixtures.
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and I. Information on basic p Physical state Appearance Molecular mass Colour Odour threshold H Relative evaporation rate (butylac Relative evaporation rate (ether=""""""""""""""""""""""""""""""""""""	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. I chemical properties Gas Clear, colorless gas. Not applicable for gas-mixtures. No data available Odour threshold is subjective and inadequate to warn for overexposure. Not applicable for gas-mixtures.
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and I. Information on basic p Physical state Appearance Molecular mass Colour Odour Odour threshold H Relative evaporation rate (butylac Relative evaporation rate (ether=" Melting point Freezing point	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. I chemical properties Gas Clear, colorless gas. Not applicable for gas-mixtures. Not data available Odour threshold is subjective and inadequate to warn for overexposure. Not applicable for gas-mixtures.
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and I. Information on basic p Physical state Appearance Molecular mass Colour Odour Odour Odour threshold H Relative evaporation rate (butylac Relative evaporation rate (ether=" Melting point Freezing point Boiling point	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. Chemical properties Gas Clear, colorless gas. Not applicable for gas-mixtures. Not data available Odour threshold is subjective and inadequate to warn for overexposure. Not applicable for gas-mixtures. No data available No data available No data available No data available No tapplicable for gas-mixtures. No tapplicable for gas-mixtures. No tapplicable for gas-mixtures. No tapplicable for gas-mixtures. No data available Not applicable for gas-mixtures.
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and All. Information on basic pro- Physical state Appearance Molecular mass Colour Odour Odour threshold H Relative evaporation rate (butylac Relative evaporation rate (ether= Melting point Freezing point Boiling point Flash point	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. Chemical properties Gas Clear, colorless gas. Not applicable for gas-mixtures.
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and I. Information on basic p Physical state Appearance Molecular mass Colour Odour threshold H Relative evaporation rate (butylac Relative evaporation rate (ether= Melting point Freezing point Boiling point Tash point Auto-ignition temperature	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. I chemical properties a clear, colorless gas. Clear, colorless gas. Not applicable for gas-mixtures. No data available
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and SECTION 9: Physical and 9: Physical a	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. I chemical properties Gas Clear, colorless gas. Not applicable for gas-mixtures. No data available Odour threshold is subjective and inadequate to warn for overexposure. Not applicable for gas-mixtures. No data available
Respiratory protection Thermal hazard protection Environmental exposure controls Other information ECTION 9: Physical and C. Information on basic pro- Physical state Appearance Molecular mass Colour Odour Odour Odour Odour Odour Odour Odour Odour Odour Calative evaporation rate (butylac Relative evaporation rate (ether=1) Melting point Treezing point Calash point Cala	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. I chemical properties a clear, colorless gas. Clear, colorless gas. Not applicable for gas-mixtures. No data available
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and All Information on basic pro- Physical state Appearance Molecular mass Colour Odour threshold H Relative evaporation rate (butylac Relative evaporation rate (butylac Relative evaporation rate (butylac Relative evaporation rate (ether=4 Melting point Freezing point Boiling point Freezing point Colour between the perature Decomposition temperature Framability (solid, gas) Yapour pressure Relative vapour density at 20 °C Relative density	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. I chemical properties a clear, colorless gas. Clear, colorless gas. Not applicable for gas-mixtures. No data available Odour threshold is subjective and inadequate to warn for overexposure. Not applicable for gas-mixtures. No data available No data
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and Environmental exposure controls Define information SECTION 9: Physical and Environmental exposure controls SECTION 9: Physical and Environmental exposure controls SECTION 9: Physical and Environmental exposure controls Relative evaporation rate (butylac Relative evaporation rate (butylac	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. I chemical properties Gas Clear, colorless gas. Not applicable for gas-mixtures. No data available Odour threshold is subjective and inadequate to warn for overexposure. Not applicable for gas-mixtures. No data available Not applicable for gas-mixtures. No tapplicable for gas-mixtures. No tapplicable for gas-mixtures. No tapplicable for gas-mixtures. No data available <l< td=""></l<>
Respiratory protection Thermal hazard protection Environmental exposure controls Other information SECTION 9: Physical and A Information on basic pro- Physical state Appearance Molecular mass Colour Odour threshold H Relative evaporation rate (butylac Relative evaporation rate (butylac Relative evaporation rate (butylac Relative evaporation rate (ether=4 Melting point Freezing point Boiling point Cash po	 None necessary. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. None necessary. Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection. Chemical properties clear, colorless gas. Clear, colorless gas. Not applicable for gas-mixtures. No data available Odour threshold is subjective and inadequate to warn for overexposure. Not applicable for gas-mixtures. No data available No tapplicable for gas-mixtures. No data available No data available No data available No data available No tapplicable. No data available <l< td=""></l<>

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

5	
Log Kow	: Not applicable for gas-mixtures.
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.
Explosive properties	: Not applicable.
Oxidising properties	: Not combustible but enhances combustion of other substances. Supports combustion.
Explosive limits	: Not applicable for gas-mixtures.
9.2. Other information	
Gas group	: Compressed gas
Additional information	: 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 u	Stable under normal conditions.			
10.3.	Possibility of hazardous reactions			
Can for	Can form explosive mixtures with flammable materials. None.			
10.4.	Conditions to avoid			
None u	None under recommended storage and handling conditions (see section 7). None.			
10.5.	Incompatible materials			
None. Flammable materials.				
10.6.	Hazardous decomposition products			

None. Under normal conditions of storage and use hazardous decomposition products should not be produced.

None. Onder normal conditions of storage				
SECTION 11: Toxicological info	rmation			
11.1. Information on toxicological ef	fects			
Acute toxicity	: Not classified			
Nitrogen (7727-37-9)				
LC50 inhalation rat (ppm)	410000 ppm/4h			
Methane (74-82-8)				
LC50 inhalation rat (ppm)	410000 ppm/4h			
ATE CLP (gases)	410000.000 ppmv/4h			
Hydrogen sulfide (7783-06-4)				
LC50 inhalation rat (mg/l)	0.99 mg/l (Exposure time: 1	ר)		
LC50 inhalation rat (ppm)	356 ppm/4h			
ATE CLP (gases)	356.000 ppmv/4h			
ATE CLP (vapours)	0.990 mg/l/4h			
ATE CLP (dust,mist)	0.990 mg/l/4h			
Oxygen (7782-44-7)				
LC50 inhalation rat (ppm)	400000 ppm/4h			
Carbon monoxide (630-08-0)				
LC50 inhalation rat (ppm)	1880 ppm/4h			
ATE CLP (gases)	1880.000 ppmv/4h			
Skin corrosion/irritation	: Not classified			
	pH: Not applicable for gas-	mixtures.		
Serious eye damage/irritation	: Not classified			
	pH: Not applicable for gas-	mixtures.		
Respiratory or skin sensitisation	: Not classified			
Germ cell mutagenicity	: Not classified			
04/01/2016	EN (English)	SDS ID: 50018MSA	5/11	

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Carcinogenicity	: Not classified
Reproductive toxicity	: (Inhalation).
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Causes damage to organs (CNS) through prolonged or repeated exposure (Inhalation). No known effects from this product.
Aspiration hazard	: Not classified Not applicable for gases and gas-mixtures.
Symptoms/injuries after inhalation	: Not expected to present a significant inhalation hazard under anticipated conditions of normal use.
Symptoms/injuries after skin contact	: Adverse effects not expected from this product.
Symptoms/injuries after eye contact	: Adverse effects not expected from this product.
Symptoms/injuries after ingestion	: Ingestion is not considered a potential route of exposure.
Symptoms/injuries upon intravenous administration	: Not known.
Chronic symptoms	: Adverse effects not expected from this product.

SECTION 12: Ecological informati	on
12.1. Toxicity	
Ecology - general	: No ecological damage caused by this product.
Hydrogen sulfide (7783-06-4)	
LC50 fishes 1	0.0448 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [flow-through])
EC50 Daphnia 1	0.022 mg/l (Exposure time: 96 h - Species: Gammarus pseudolimnaeus)
LC50 fish 2	0.016 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
12.2. Persistence and degradability	
Oxygen (0.0015-23.5), Methane (0.0005-2.5	5%), Carbon Monoxide (0.001-1.0%), Hydrogen Sulfide (0.001-0.025%) in Nitrogen Balance
Persistence and degradability	No data available.
Nitrogen (7727-37-9)	
Persistence and degradability	No ecological damage caused by this product.
Methane (74-82-8)	
Persistence and degradability	The substance is biodegradable. Unlikely to persist. No data available.
Hydrogen sulfide (7783-06-4)	
Persistence and degradability	Not applicable for inorganic gases.
Oxygen (7782-44-7)	
Persistence and degradability	No ecological damage caused by this product.
Carbon monoxide (630-08-0)	
Persistence and degradability	Will not undergo hydrolysis. Not readily biodegradable. Not applicable for inorganic gases.
12.3. Bioaccumulative potential	
Oxygen (0.0015-23.5), Methane (0.0005-2.5	5%), Carbon Monoxide (0.001-1.0%), Hydrogen Sulfide (0.001-0.025%) in Nitrogen Balance
Log Pow	Not applicable for gas-mixtures.
Log Kow	Not applicable for gas-mixtures.

Logiton		
Bioaccumulative potential	No data available.	
Nitrogen (7727-37-9)		
Nill Ogen (1721-51-5)		
Log Pow	Not applicable for inorganic gases.	
Bioaccumulative potential	No ecological damage caused by this product.	
Mathema (74.92.9)		
Methane (74-82-8)		
Log Pow	1.09	
Log Kow	Not applicable for gas-mixtures.	
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.	

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

ccording to Federal Register / Vol. 77, No. 58 / Monday,	march 20, 2012 / Rules and Regulations		
Hydrogen sulfide (7783-06-4)			
BCF fish 1	(no bioaccumulation expected)		
Log Pow	Not applicable for inorganic gases.		
Bioaccumulative potential	No data available.		
Oxygen (7782-44-7)			
Log Pow	Not applicable for inorganic gases.		
Bioaccumulative potential	No ecological damage caused by this product.		
Carbon monoxide (630-08-0)			
Log Pow	1.78		
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.		
12.4. Mobility in soil			
•), Carbon Monoxide (0.001-1.0%), Hydrogen Sulfide (0.001-0.025%) in Nitrogen Balance		
Mobility in soil	No data available.		
Nitrogen (7727-37-9)			
Ecology - soil	No ecological damage caused by this product.		
Methane (74-82-8)	No. data ana labla		
Mobility in soil	No data available.		
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.		
Hydrogen sulfide (7783-06-4)			
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.		
Oxygen (7782-44-7)			
Ecology - soil	No ecological damage caused by this product.		
Carbon monoxide (630-08-0)			
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.		
12.5. Other adverse effects No additional information available			
SECTION 13: Disposal consideration	hs		
13.1. Waste treatment methods			
Waste treatment methods	: Contact supplier if guidance is required. May be vented to atmosphere. Do not discharge into any place where its accumulation could be dangerous. 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.		
Additional information	: None.		
SECTION 14: Transport information			
In accordance with DOT			
Fransport document description	: UN1956 Compressed gas, n.o.s. (Oxygen, Nitrogen), 2.2		
JN-No.(DOT)	: 1956		
DOT NA no.	: UN1956		
DOT Proper Shipping Name	: Compressed gas, n.o.s.		
	(Oxygen, Nitrogen)		
Department of Transportation (DOT) Hazard Classes	: 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115		
Hazard labels (DOT)	: 2.2 - Non-flammable gas		

DOT Symbols DOT Packaging Exceptions (49 CFR 173.xxx) : G - Identifies PSN requiring a technical name

: 306;307

OOT Packaging Non Bulk (49 CFR 173.xxx)	: 302;305
OOT Packaging Bulk (49 CFR 173.xxx)	: 314;315
OOT Quantity Limitations Passenger aircraft/rail 49 CFR 173.27)	: 75 kg
OOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 150 kg
OOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
Additional information	
Other information	: No supplementary information available.
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.
ADR	
ransport document description	:
Fransport by sea	
JN-No. (IMDG)	: 1956
Proper Shipping Name (IMDG)	: COMPRESSED GAS, N.O.S.
Class (IMDG)	: 2.2 - Non-flammable, non-toxic gases
Air transport	
JN-No.(IATA)	: 1956
Proper Shipping Name (IATA)	: COMPRESSED GAS, N.O.S.
Class (IATA)	: 2
SECTION 15: Regulatory information	
5.1. US Federal regulations	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
Nitrogen (7727-37-9)	
Listed on the United States TSCA (Toxic Substa	ances Control Act) inventory
Methane (74-82-8)	
Listed on the United States TCCA (Taxis Substa	ances Control Act) inventory
Listed on the United States TSCA (Toxic Substa	
Hydrogen sulfide (7783-06-4)	ances Control Act) inventory
	ances Control Act) inventory
Hydrogen sulfide (7783-06-4) Listed on the United States TSCA (Toxic Substa Listed on the United States SARA Section 302	ances Control Act) inventory 500
Hydrogen sulfide (7783-06-4) Listed on the United States TSCA (Toxic Substa Listed on the United States SARA Section 302 Listed on United States SARA Section 313 SARA Section 302 Threshold Planning	
Hydrogen sulfide (7783-06-4) Listed on the United States TSCA (Toxic Substa Listed on the United States SARA Section 302 Listed on United States SARA Section 313 SARA Section 302 Threshold Planning Quantity (TPQ)	500

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International regulations

### CANADA

Nitrogen (7727-37-9)		
Listed on the Canadian DSL (Domestic Substances List)		
WHMIS Classification	Class A - Compressed Gas	

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Methane (74-82-8)		
Listed on the Canadian DSL (Domestic	: Sustances List)	
WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas	
Hydrogen sulfide (7783-06-4)		
Listed on the Canadian DSL (Domestic	: Sustances List)	
WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects	
Oxygen (7782-44-7)		
Listed on the Canadian DSL (Domestic	: Sustances List)	
WHMIS Classification	Class A - Compressed Gas Class C - Oxidizing Material	
Carbon monoxide (630-08-0)		
Listed on the Canadian DSL (Domestic	: Sustances List)	
WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision A - Very toxic material causing other toxic effects	

#### **EU-Regulations**

Nitrogen (7727-37-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Methane (74-82-8)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Hydrogen sulfide (7783-06-4)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Oxygen (7782-44-7)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Carbon monoxide (630-08-0)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

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

Not classified

#### Classification according to Directive 67/548/EEC or 1999/45/EC

#### 15.2.2. National regulations

Nitrogen (7727-37-9)			
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)			
Methane (74-82-8)			
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)			
04/01/2016	EN (English)	SDS ID: 50018MSA	9/11

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Hydrogen sulfide (7783-06-4)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Korean ECL (Existing Chemicals List) Listed on NZIOC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the Canadian IDL (Ingredient Disclosure List)
Oxygen (7782-44-7)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Carbon monoxide (630-08-0)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the Canadian IDL (Ingredient Disclosure List)

#### 15.3. US State regulations

Carbon monoxide (630-08-0)				
U.S California - Proposition 65 - Carcinogens List	U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
	Yes			

#### Nitrogen (7727-37-9)

- U.S. Massachusetts Right To Know List
- U.S. New Jersey Right to Know Hazardous Substance List
- U.S. Pennsylvania RTK (Right to Know) List

#### Methane (74-82-8)

- U.S. Massachusetts Right To Know List
- U.S. New Jersey Right to Know Hazardous Substance List
- U.S. Pennsylvania RTK (Right to Know) List

#### Hydrogen sulfide (7783-06-4)

- U.S. Massachusetts Right To Know List
- U.S. New Jersey Right to Know Hazardous Substance List
- U.S. Pennsylvania RTK (Right to Know) Environmental Hazard List
- U.S. Pennsylvania RTK (Right to Know) List

#### Oxygen (7782-44-7)

- U.S. Massachusetts Right To Know List
- U.S. New Jersey Right to Know Hazardous Substance List
- U.S. Pennsylvania RTK (Right to Know) List

#### Carbon monoxide (630-08-0)

- U.S. Massachusetts Right To Know List
- U.S. New Jersey Right to Know Hazardous Substance List
- U.S. Pennsylvania RTK (Right to Know) Environmental Hazard List
- U.S. Pennsylvania RTK (Right to Know) List

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

#### **SECTION 16: Other information**

Indication of changes	: Revised safety data sheet in accordance with OSHA final rule on GHS implementation promulgated March 26, 2012.
Training advice	: Receptacle under pressure.
Other information	: This Safety Data Sheet has been established in accordance with the applicable European Union legislation. Classification in accordance with calculation methods of regulation (EC) 1272/2008 CLP / (EC) 1999/45 DPD.

#### Full text of H-phrases: see section 16:

Acute Tox. 2 (Inhalation:gas)	Acute toxicity (inhalation:gas) Category 2
Acute Tox. 3 (Inhalation:gas)	Acute toxicity (inhalation:gas) Category 3
Compressed gas	Gases under pressure : Compressed gas
Flam. Gas 1	Flammable gases, Category 1
Liquefied gas	Gases under pressure : Liquefied gas
Ox. Gas 1	Oxidising Gases, Category 1
Repr. 1A	Reproductive toxicity, Category 1A
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H220	Extremely flammable gas
H270	May cause or intensify fire; oxidizer
H280	Contains gas under pressure; may explode if heated
H330	Fatal if inhaled
H331	Toxic if inhaled
H335	May cause respiratory irritation
H360	May damage fertility or the unborn child
H372	Causes damage to organs (CNS) through prolonged or repeated exposure

#### SDS US (GHS HazCom 2012)

This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this gas mixture. To the best of Calgaz's knowledge, the information contained herein is reliable and accurate as of this date; however, accruacy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this gas mixture is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.