

# SAFETY DATA SHEET

Praxair UNIV/NGA Calibration Mix Cylinders, Part Number 5184-3544

## Section 1. Identification

### 1.1 Product identifier

**Product name** : Praxair UNIV/NGA Calibration Mix Cylinders, Part Number 5184-3544  
**Part no. (chemical kit)** : 5184-3544  
**Part no.** : Universal Calibration Mix 5184-3541  
 Praxair NGA Natural Gas Analyzer Mix 5184-3536 / 5184-3542  
**Validation date** : 8/20/2018

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

**Material uses** :  Reagents and Standards for Analytical Chemistry Laboratory Use  
 Universal Calibration Mix 1 L Cylinder  
 Praxair NGA Natural Gas Analyzer Mix 1 L Cylinder

### 1.3 Details of the supplier of the safety data sheet

**Supplier/Manufacturer** : Agilent Technologies, Inc.  
 5301 Stevens Creek Blvd  
 Santa Clara, CA 95051, USA  
 800-227-9770

### 1.4 Emergency telephone number

**In case of emergency** : CHEMTREC®: 1-800-424-9300

## Section 2. Hazards identification

### 2.1 Classification of the substance or mixture

**OSHA/HCS status** :  Universal Calibration Mix This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).  
 Praxair NGA Natural Gas Analyzer Mix This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Classification of the substance or mixture

#### Universal Calibration Mix

H220 FLAMMABLE GASES - Category 1  
 H280 GASES UNDER PRESSURE - Compressed gas  
 Simple Asphyx. SIMPLE ASPHYXIANTS  
 H360 TOXIC TO REPRODUCTION (Unborn child) - Category 1A

#### Praxair NGA Natural Gas Analyzer Mix

H220 FLAMMABLE GASES - Category 1  
 H280 GASES UNDER PRESSURE - Compressed gas  
 Simple Asphyx. SIMPLE ASPHYXIANTS  
 H361 TOXIC TO REPRODUCTION (Fertility) - Category 2

**Ingredients of unknown toxicity** :  Universal Calibration Mix Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: > 60%  
 Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: > 60%  
 Percentage of the mixture consisting of ingredient (s) of unknown oral toxicity: > 60%  
 Praxair NGA Natural Gas Analyzer Mix Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: > 60%  
 Mix Percentage of the mixture consisting of ingredient

## Section 2. Hazards identification

(s) of unknown inhalation toxicity: > 60%  
 Percentage of the mixture consisting of ingredient  
 (s) of unknown oral toxicity: > 60%  
 Percentage of the mixture consisting of ingredient  
 (s) of unknown hazards to the aquatic environment:  
 99%  
 Percentage of the mixture consisting of ingredient  
 (s) of unknown hazards to the aquatic environment:  
 93.7%

Universal Calibration Mix

Praxair NGA Natural Gas Analyzer Mix

### 2.2 GHS label elements

#### Hazard pictograms

: Universal Calibration Mix



Praxair NGA Natural Gas Analyzer Mix



#### Signal word

: Universal Calibration Mix  
 Praxair NGA Natural Gas Analyzer Mix

Danger  
 Danger

#### Hazard statements

: Universal Calibration Mix

H220 - Extremely flammable gas.  
 H280 - Contains gas under pressure; may explode if heated.  
 No Code(s) - May displace oxygen and cause rapid suffocation.  
 H360 - May damage the unborn child.  
 H220 - Extremely flammable gas.

Praxair NGA Natural Gas Analyzer Mix

H280 - Contains gas under pressure; may explode if heated.  
 No Code(s) - May displace oxygen and cause rapid suffocation.  
 H361 - Suspected of damaging fertility.

### Precautionary statements

#### Prevention

: Universal Calibration Mix

P201 - Obtain special instructions before use.  
 P202 - Do not handle until all safety precautions have been read and understood.  
 P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.  
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Praxair NGA Natural Gas Analyzer Mix

P201 - Obtain special instructions before use.  
 P202 - Do not handle until all safety precautions have been read and understood.  
 P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.  
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

## Section 2. Hazards identification

<b>Response</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix  Praxair NGA Natural Gas Analyzer Mix	P308 + P313 - IF exposed or concerned: Get medical attention. P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381 - Eliminate all ignition sources if safe to do so. P308 + P313 - IF exposed or concerned: Get medical attention. P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381 - Eliminate all ignition sources if safe to do so.
<b>Storage</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix  Praxair NGA Natural Gas Analyzer Mix	P405 - Store locked up. P410 - Protect from sunlight. P403 - Store in a well-ventilated place. P405 - Store locked up.  P410 - Protect from sunlight. P403 - Store in a well-ventilated place.
<b>Disposal</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix  Praxair NGA Natural Gas Analyzer Mix	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Supplemental label elements</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix  Praxair NGA Natural Gas Analyzer Mix	Keep container tightly closed. Use only with adequate ventilation. Do not enter storage areas and confined spaces unless adequately ventilated. Keep container tightly closed. Use only with adequate ventilation. Do not enter storage areas and confined spaces unless adequately ventilated.
<b>2.3 Other hazards</b>		
<b>Hazards not otherwise classified</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	None known. None known.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Mixture Mixture
--------------------------	---	--------------------

Ingredient name	%	CAS number
<input checked="" type="checkbox"/> Universal Calibration Mix Carbon monoxide	≤0.2	630-08-0
<b>Praxair NGA Natural Gas Analyzer Mix</b> n-Hexane	≤0.2	110-54-3




Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

**Occupational exposure limits, if available, are listed in Section 8.**

## Section 4. First aid measures

### 4.1 Description of necessary first aid measures

<b>Eye contact</b>	:  Universal Calibration Mix	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
	Praxair NGA Natural Gas Analyzer Mix	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
<b>Inhalation</b>	:  Universal Calibration Mix	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	Praxair NGA Natural Gas Analyzer Mix	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
<b>Skin contact</b>	:  Universal Calibration Mix	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	Praxair NGA Natural Gas Analyzer Mix	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

## Section 4. First aid measures

<b>Ingestion</b>	: Universal Calibration Mix	As this product is a gas, refer to the inhalation section.
	Praxair NGA Natural Gas Analyzer Mix	As this product is a gas, refer to the inhalation section.

### 4.2 Most important symptoms/effects, acute and delayed

#### Potential acute health effects

<b>Eye contact</b>	: Universal Calibration Mix	Contact with rapidly expanding gas may cause burns or frostbite.
	Praxair NGA Natural Gas Analyzer Mix	Contact with rapidly expanding gas may cause burns or frostbite.
<b>Inhalation</b>	: Universal Calibration Mix	At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.
	Praxair NGA Natural Gas Analyzer Mix	At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.
<b>Skin contact</b>	: Universal Calibration Mix	Contact with rapidly expanding gas may cause burns or frostbite.
	Praxair NGA Natural Gas Analyzer Mix	Contact with rapidly expanding gas may cause burns or frostbite.
<b>Ingestion</b>	: Universal Calibration Mix	As this product is a gas, refer to the inhalation section.
	Praxair NGA Natural Gas Analyzer Mix	As this product is a gas, refer to the inhalation section.

#### Over-exposure signs/symptoms

<b>Eye contact</b>	: Universal Calibration Mix	No specific data.
	Praxair NGA Natural Gas Analyzer Mix	No specific data.
<b>Inhalation</b>	: Universal Calibration Mix	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	Praxair NGA Natural Gas Analyzer Mix	Adverse symptoms may include the following:  reduced fetal weight increase in fetal deaths skeletal malformations
<b>Skin contact</b>	: Universal Calibration Mix	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	Praxair NGA Natural Gas Analyzer Mix	Adverse symptoms may include the following:  reduced fetal weight increase in fetal deaths skeletal malformations
<b>Ingestion</b>	: Universal Calibration Mix	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	Praxair NGA Natural Gas Analyzer Mix	Adverse symptoms may include the following:  reduced fetal weight increase in fetal deaths skeletal malformations

## Section 4. First aid measures

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

<b>Notes to physician</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix  Praxair NGA Natural Gas Analyzer Mix	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.  In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
<b>Specific treatments</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	No specific treatment. No specific treatment.
<b>Protection of first-aiders</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix  Praxair NGA Natural Gas Analyzer Mix	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.  No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix  Praxair NGA Natural Gas Analyzer Mix	Use an extinguishing agent suitable for the surrounding fire.  Use an extinguishing agent suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	None known. None known.

### 5.2 Special hazards arising from the substance or mixture

<b>Specific hazards arising from the chemical</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix  Praxair NGA Natural Gas Analyzer Mix	Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.  Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
---	---	--

## Section 5. Fire-fighting measures

<b>Hazardous thermal decomposition products</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix  Praxair NGA Natural Gas Analyzer Mix	Decomposition products may include the following materials: carbon dioxide carbon monoxide Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides
<b><u>5.3 Advice for firefighters</u></b>		
<b>Special protective actions for fire-fighters</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix  Praxair NGA Natural Gas Analyzer Mix	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.
<b>Special protective equipment for fire-fighters</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix  Praxair NGA Natural Gas Analyzer Mix	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix	Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
------------------------------------	---	--

## Section 6. Accidental release measures

Praxair NGA Natural Gas Analyzer Mix

Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders :**  Universal Calibration Mix

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".  
If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Praxair NGA Natural Gas Analyzer Mix

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

### 6.2 Environmental precautions

Universal Calibration Mix

Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Praxair NGA Natural Gas Analyzer Mix

Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### 6.3 Methods and materials for containment and cleaning up

**Methods for cleaning up :**  Universal Calibration Mix

Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

Praxair NGA Natural Gas Analyzer Mix

Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

## Section 7. Handling and storage




### 7.1 Precautions for safe handling

**Protective measures :**  Universal Calibration Mix

Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating,



## Section 7. Handling and storage

		lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container.
	Praxair NGA Natural Gas Analyzer Mix	Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container.
<b>Advice on general occupational hygiene</b>	:  Universal Calibration Mix	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
	Praxair NGA Natural Gas Analyzer Mix	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
<b>7.2 Conditions for safe storage, including any incompatibilities</b>	:  Universal Calibration Mix	Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.
	Praxair NGA Natural Gas Analyzer Mix	Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.
<b>7.3 Specific end use(s) Recommendations</b>	:  Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Industrial applications, Professional applications. Industrial applications, Professional applications.

## Section 7. Handling and storage

**Industrial sector specific solutions** :  Universal Calibration Mix Not applicable.  
 Praxair NGA Natural Gas Analyzer Mix Not applicable.  
 Mix

## Section 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
<input checked="" type="checkbox"/> <b>Universal Calibration Mix</b> Carbon monoxide	<b>ACGIH TLV (United States, 3/2017).</b> TWA: 25 ppm 8 hours. TWA: 29 mg/m <sup>3</sup> 8 hours. <b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 35 ppm 8 hours. TWA: 40 mg/m <sup>3</sup> 8 hours. CEIL: 200 ppm CEIL: 229 mg/m <sup>3</sup> <b>NIOSH REL (United States, 10/2016).</b> TWA: 35 ppm 10 hours. TWA: 40 mg/m <sup>3</sup> 10 hours. CEIL: 200 ppm CEIL: 229 mg/m <sup>3</sup> <b>OSHA PEL (United States, 6/2016).</b> TWA: 50 ppm 8 hours. TWA: 55 mg/m <sup>3</sup> 8 hours.
<b>Praxair NGA Natural Gas Analyzer Mix</b> n-Hexane	<b>ACGIH TLV (United States, 3/2017).</b> <b>Absorbed through skin.</b> TWA: 50 ppm 8 hours. <b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 50 ppm 8 hours. TWA: 180 mg/m <sup>3</sup> 8 hours. <b>NIOSH REL (United States, 10/2016).</b> TWA: 50 ppm 10 hours. TWA: 180 mg/m <sup>3</sup> 10 hours. <b>OSHA PEL (United States, 6/2016).</b> TWA: 500 ppm 8 hours. TWA: 1800 mg/m <sup>3</sup> 8 hours.

### 8.2 Exposure controls

#### Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

#### Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

#### Individual protection measures

## Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	: Universal Calibration Mix Gas. Praxair NGA Natural Gas Analyzer Gas. Mix
<b>Color</b>	: Universal Calibration Mix Not available. Praxair NGA Natural Gas Analyzer Not available. Mix
<b>Odor</b>	: Universal Calibration Mix Not available. Praxair NGA Natural Gas Analyzer Not available. Mix
<b>Odor threshold</b>	: Universal Calibration Mix Not available. Praxair NGA Natural Gas Analyzer Not available. Mix
<b>pH</b>	: Universal Calibration Mix Not available. Praxair NGA Natural Gas Analyzer Not available. Mix
<b>Melting point</b>	: Universal Calibration Mix Not available. Praxair NGA Natural Gas Analyzer Not available. Mix

## Section 9. Physical and chemical properties

<b>Boiling point</b>	: Universal Calibration Mix	Not available.
	Praxair NGA Natural Gas Analyzer Mix	Not available.
<b>Flash point</b>	: Universal Calibration Mix	Closed cup: <-18°C (<-0.4°F)
	Praxair NGA Natural Gas Analyzer Mix	Closed cup: <-18°C (<-0.4°F)
<b>Evaporation rate</b>	: Universal Calibration Mix	Not available.
	Praxair NGA Natural Gas Analyzer Mix	Not available.
<b>Flammability (solid, gas)</b>	: Universal Calibration Mix	Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
	Praxair NGA Natural Gas Analyzer Mix	Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
<b>Lower and upper explosive (flammable) limits</b>	: Universal Calibration Mix	Not available.
	Praxair NGA Natural Gas Analyzer Mix	Not available.
<b>Vapor pressure</b>	: Universal Calibration Mix	Not available.
	Praxair NGA Natural Gas Analyzer Mix	Not available.
<b>Vapor density</b>	: Universal Calibration Mix	Not available.
	Praxair NGA Natural Gas Analyzer Mix	Not available.
<b>Relative density</b>	: Universal Calibration Mix	Not available.
	Praxair NGA Natural Gas Analyzer Mix	Not available.
<b>Solubility</b>	: Universal Calibration Mix	Very slightly soluble in the following materials: cold water and hot water.
	Praxair NGA Natural Gas Analyzer Mix	Not available.
<b>Partition coefficient: n-octanol/water</b>	: Universal Calibration Mix	Not available.
	Praxair NGA Natural Gas Analyzer Mix	Not available.
<b>Auto-ignition temperature</b>	: Universal Calibration Mix	Not available.
	Praxair NGA Natural Gas Analyzer Mix	Not available.
<b>Decomposition temperature</b>	: Universal Calibration Mix	Not available.
	Praxair NGA Natural Gas Analyzer Mix	Not available.
<b>Viscosity</b>	: Universal Calibration Mix	Not available.
	Praxair NGA Natural Gas Analyzer Mix	Not available.

## Section 10. Stability and reactivity

<b>10.1 Reactivity</b>	: Universal Calibration Mix	No specific test data related to reactivity available for this product or its ingredients.
	Praxair NGA Natural Gas Analyzer Mix	No specific test data related to reactivity available for this product or its ingredients.
<b>10.2 Chemical stability</b>	: Universal Calibration Mix	The product is stable.
	Praxair NGA Natural Gas Analyzer Mix	The product is stable.

## Section 10. Stability and reactivity

- 10.3 Possibility of hazardous reactions** :  Universal Calibration Mix Under normal conditions of storage and use, hazardous reactions will not occur.  
Praxair NGA Natural Gas Analyzer Mix Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 Conditions to avoid** :  Universal Calibration Mix Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow gas to accumulate in low or confined areas.  
Praxair NGA Natural Gas Analyzer Mix Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow gas to accumulate in low or confined areas.
- 10.5 Incompatible materials** :  Universal Calibration Mix May react or be incompatible with oxidizing materials.  
Praxair NGA Natural Gas Analyzer Mix May react or be incompatible with oxidizing materials.
- 10.6 Hazardous decomposition products** :  Universal Calibration Mix Under normal conditions of storage and use, hazardous decomposition products should not be produced.  
Praxair NGA Natural Gas Analyzer Mix Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
<input checked="" type="checkbox"/> Universal Calibration Mix Carbon monoxide	LC50 Inhalation Gas. LC50 Inhalation Vapor	Rat Rat	1807 ppm 1900 mg/m <sup>3</sup>	4 hours 4 hours
<b>Praxair NGA Natural Gas Analyzer Mix</b> n-Hexane	LC50 Inhalation Vapor LC50 Inhalation Vapor LD50 Oral	Rat - Male, Female Rat Rat	>31.86 mg/l 48000 ppm 15840 mg/kg	4 hours 4 hours -

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<input checked="" type="checkbox"/> Praxair NGA Natural Gas Analyzer Mix n-Hexane	Eyes - Mild irritant	Rabbit	-	10 milligrams	-

#### Sensitization

Not available.

#### Mutagenicity

**Conclusion/Summary** : Not available.

#### Carcinogenicity

## Section 11. Toxicological information

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Praxair NGA Natural Gas Analyzer Mix n-Hexane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
<input checked="" type="checkbox"/> Universal Calibration Mix Carbon monoxide	Category 1	Not determined	cardiovascular system and central nervous system (CNS)
Praxair NGA Natural Gas Analyzer Mix n-Hexane	Category 2	Not determined	nervous system and peripheral nervous system

### Aspiration hazard

Name	Result
Praxair NGA Natural Gas Analyzer Mix n-Hexane	ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure** :  Universal Calibration Mix Routes of entry anticipated: Inhalation.  
Praxair NGA Natural Gas Analyzer Mix Routes of entry anticipated: Inhalation.

### Potential acute health effects

**Eye contact** :  Universal Calibration Mix Contact with rapidly expanding gas may cause burns or frostbite.  
Praxair NGA Natural Gas Analyzer Mix Contact with rapidly expanding gas may cause burns or frostbite.

**Inhalation** :  Universal Calibration Mix At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.  
Praxair NGA Natural Gas Analyzer Mix At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.

**Skin contact** :  Universal Calibration Mix Contact with rapidly expanding gas may cause burns or frostbite.  
Praxair NGA Natural Gas Analyzer Mix Contact with rapidly expanding gas may cause burns or frostbite.

## Section 11. Toxicological information

<b>Ingestion</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix	As this product is a gas, refer to the inhalation section.
	Praxair NGA Natural Gas Analyzer Mix	As this product is a gas, refer to the inhalation section.

### Symptoms related to the physical, chemical and toxicological characteristics

<b>Eye contact</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix	No specific data.
	Praxair NGA Natural Gas Analyzer Mix	No specific data.
<b>Inhalation</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	Praxair NGA Natural Gas Analyzer Mix	Adverse symptoms may include the following:  reduced fetal weight increase in fetal deaths skeletal malformations
<b>Skin contact</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	Praxair NGA Natural Gas Analyzer Mix	Adverse symptoms may include the following:  reduced fetal weight increase in fetal deaths skeletal malformations
<b>Ingestion</b>	: <input checked="" type="checkbox"/> Universal Calibration Mix	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	Praxair NGA Natural Gas Analyzer Mix	Adverse symptoms may include the following:  reduced fetal weight increase in fetal deaths skeletal malformations

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

**General** :  Universal Calibration Mix No known significant effects or critical hazards.  
Praxair NGA Natural Gas Analyzer Mix No known significant effects or critical hazards.

**Carcinogenicity** :  Universal Calibration Mix No known significant effects or critical hazards.  
Praxair NGA Natural Gas Analyzer Mix No known significant effects or critical hazards.

## Section 11. Toxicological information

<b>Mutagenicity</b>	: Universal Calibration Mix	No known significant effects or critical hazards.
	Praxair NGA Natural Gas Analyzer Mix	No known significant effects or critical hazards.
<b>Teratogenicity</b>	: Universal Calibration Mix	May damage the unborn child.
	Praxair NGA Natural Gas Analyzer Mix	No known significant effects or critical hazards.
<b>Developmental effects</b>	: Universal Calibration Mix	No known significant effects or critical hazards.
	Praxair NGA Natural Gas Analyzer Mix	No known significant effects or critical hazards.
<b>Fertility effects</b>	: Universal Calibration Mix	No known significant effects or critical hazards.
	Praxair NGA Natural Gas Analyzer Mix	Suspected of damaging fertility.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Praxair NGA Natural Gas Analyzer Mix n-Hexane	Acute LC50 2500 µg/l Fresh water	Fish - Pimephales promelas	96 hours

### 12.2 Persistence and degradability

Not available.

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Praxair NGA Natural Gas Analyzer Mix n-Hexane	4	501.187	high

### 12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

12.5 Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

### 13.1 Waste treatment methods



## Section 13. Disposal considerations






**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty pressure vessels should be returned to the supplier. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

## Section 14. Transport information

	<b>DOT Classification</b>	<b>TDG Classification</b>	<b>Mexico Classification</b>	<b>IMDG</b>	<b>IATA</b>
<b>UN number</b>	UN1954	UN1954	UN1954	UN1954	UN1954
<b>UN proper shipping name</b>	Compressed gas, flammable, n.o.s. (Methane, Ethane)	COMPRESSED GAS, FLAMMABLE, N. O.S. (Methane, Ethane)	GAS COMPRIMIDO INFLAMABLE, N. E.P. (Methane, Ethane)	COMPRESSED GAS, FLAMMABLE, N.O.S. (Methane, Ethane)	Compressed gas, flammable, n.o.s. (Methane, Ethane)
<b>Transport hazard class(es)</b>	2.1 	2.1 	2.1 	2.1 	2.1 
<b>Packing group</b>	-	-	-	-	-
<b>Environmental hazards</b>	No.	No.	No.	No.	No.

### Additional information

#### DOT Classification

:  **Limited quantity** Yes.  
**Packaging instruction** Exceptions: 306. Non-bulk: 302, 305. Bulk: 314, 315.  
**Quantity limitation** Passenger aircraft/rail: Forbidden. Cargo aircraft: 150 kg.

#### TDG Classification

: Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2).  
**Explosive Limit and Limited Quantity Index** 0.125  
**ERAP Index** 3000  
**Passenger Carrying Ship Index** Forbidden  
**Passenger Carrying Road or Rail Index** Forbidden  
**Special provisions** 16

#### Mexico Classification

: **Special provisions** 274

## Section 14. Transport information

- IMDG** : **Emergency schedules** F-D, S-U  
**Special provisions** 274
- IATA** : **Quantity limitation** Passenger and Cargo Aircraft: Forbidden. Packaging instructions: Forbidden. Cargo Aircraft Only: 150 kg. Packaging instructions: 200. Limited Quantities - Passenger Aircraft: Forbidden. Packaging instructions: Forbidden.  
**Special provisions** A1
- Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
- Transport in bulk according to Annex II of MARPOL and the IBC Code** : Not available.

## Section 15. Regulatory information

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

- U.S. Federal regulations** : **TSCA 8(a) PAIR:** Heptane; pentane  
**TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**Clean Air Act (CAA) 112 regulated flammable substances:** Methane; Butane; Ethane; Propane; Isobutane
- Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Listed
- Clean Air Act Section 602 Class I Substances** : Not listed
- Clean Air Act Section 602 Class II Substances** : Not listed
- DEA List I Chemicals (Precursor Chemicals)** : Not listed
- DEA List II Chemicals (Essential Chemicals)** : Not listed

### SARA 302/304

#### Composition/information on ingredients

No products were found.

- SARA 304 RQ** : Not applicable.

### SARA 311/312

- Classification** :  Universal Calibration Mix  
Praxair NGA Natural Gas Analyzer Mix
- FLAMMABLE GASES - Category 1  
GASES UNDER PRESSURE - Compressed gas  
SIMPLE ASPHYXIANTS  
TOXIC TO REPRODUCTION (Unborn child) - Category 1A  
FLAMMABLE GASES - Category 1
- GASES UNDER PRESSURE - Compressed gas  
SIMPLE ASPHYXIANTS  
TOXIC TO REPRODUCTION (Fertility) - Category 2

#### Composition/information on ingredients

## Section 15. Regulatory information

Name	%	Classification
<b>Universal Calibration Mix</b>		
Methane	≥90	FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Compressed gas SIMPLE ASPHYXIANTS
Carbon monoxide	≤0.2	FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Compressed gas ACUTE TOXICITY (inhalation) - Category 2 TOXIC TO REPRODUCTION (Unborn child) - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (cardiovascular system, central nervous system (CNS)) - Category 1
<b>Praxair NGA Natural Gas Analyzer Mix</b>		
Methane	≥50 - ≤75	FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Compressed gas SIMPLE ASPHYXIANTS
Ethane	≤10	FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Compressed gas SIMPLE ASPHYXIANTS
Propane	≤10	FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Compressed gas SIMPLE ASPHYXIANTS
Nitrogen	≤10	GASES UNDER PRESSURE - Compressed gas SIMPLE ASPHYXIANTS
Isobutane	≤5	FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Compressed gas SIMPLE ASPHYXIANTS
Butane	≤3	FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Compressed gas SIMPLE ASPHYXIANTS
Carbon dioxide	≤3	GASES UNDER PRESSURE - Compressed gas SIMPLE ASPHYXIANTS
n-Hexane	≤0.2	FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A TOXIC TO REPRODUCTION (Fertility) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (nervous system, peripheral nervous system) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Static-accumulating flammable liquid

### State regulations

#### Massachusetts

: The following components are listed: METHANE; MARSH GAS; NITROGEN; NITROGEN (LIQUIFIED); BUTANE; ETHANE; PROPANE; ISOBUTANE

#### New York

: None of the components are listed.

#### New Jersey

: The following components are listed: METHANE; NITROGEN; BUTANE; ETHANE; PROPANE; Isobutane; PROPANE, 2-METHYL-

#### Pennsylvania

: The following components are listed: METHANE; NITROGEN; BUTANE; ETHANE; PROPANE; PROPANE, 2-METHYL-

### California Prop. 65

**⚠ WARNING:** This product can expose you to chemicals including Carbon monoxide, n-Hexane, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Section 15. Regulatory information

Ingredient name	No significant risk level	Maximum acceptable dosage level
<b>Universal Calibration Mix</b> Carbon monoxide n-Hexane	- -	- -
<b>Praxair NGA Natural Gas Analyzer Mix</b> n-Hexane	-	-

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol (Annexes A, B, C, E)

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### Inventory list

<b>Australia</b>	: All components are listed or exempted.
<b>Canada</b>	: All components are listed or exempted.
<b>China</b>	: Not determined.
<b>Europe</b>	: All components are listed or exempted.
<b>Japan</b>	: <b>Japan inventory (ENCS)</b> : All components are listed or exempted. <b>Japan inventory (ISHL)</b> : All components are listed or exempted.
<b>Malaysia</b>	: Not determined.
<b>New Zealand</b>	: All components are listed or exempted.
<b>Philippines</b>	: All components are listed or exempted.
<b>Republic of Korea</b>	: All components are listed or exempted.
<b>Taiwan</b>	: All components are listed or exempted.
<b>Thailand</b>	: Not determined.
<b>Turkey</b>	: Not determined.
<b>United States</b>	: All components are listed or exempted.
<b>Viet Nam</b>	: Not determined.

## Section 16. Other information

### History

<b>Date of issue</b>	: 08/20/2018
<b>Date of previous issue</b>	: 09/06/2017
<b>Version</b>	: 5

### Procedure used to derive the classification

## Section 16. Other information

Classification	Justification
<b>Universal Calibration Mix</b> FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Compressed gas SIMPLE ASPHYXIANTS TOXIC TO REPRODUCTION (Unborn child) - Category 1A	On basis of test data On basis of test data Expert judgment Calculation method
<b>Praxair NGA Natural Gas Analyzer Mix</b> FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Compressed gas SIMPLE ASPHYXIANTS TOXIC TO REPRODUCTION (Fertility) - Category 2	On basis of test data On basis of test data Expert judgment Calculation method

📌 Indicates information that has changed from previously issued version.

### [Notice to reader](#)

**Disclaimer:** The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.