

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 : 9/6/2017

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

Material uses : Analytical chemistry.
 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%

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.

Response

:  Universal Calibration 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

Praxair NGA Natural Gas Analyzer Mix

Section 2. Hazards identification

Storage

: Universal Calibration Mix

Praxair NGA Natural Gas Analyzer Mix

leak can be stopped safely.
P381 - Eliminate all ignition sources if safe to do so.
P405 - Store locked up.
P410 - Protect from sunlight.
P403 - Store in a well-ventilated place.
P405 - Store locked up.

Disposal

: Universal Calibration Mix

Praxair NGA Natural Gas Analyzer Mix

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

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.

Supplemental label elements

: 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.

2.3 Other hazards

Hazards not otherwise classified

: Universal Calibration Mix

Praxair NGA Natural Gas Analyzer Mix

None known.

None known.

Section 3. Composition/information on ingredients

Substance/mixture

: 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
Praxair NGA Natural Gas Analyzer Mix 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

Eye contact

: Universal Calibration Mix


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.

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses.

Section 4. First aid measures

Inhalation

:  Universal Calibration Mix

Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

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.

Skin contact

:  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.

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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.

Ingestion

:  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

Section 4. First aid measures

Eye contact	: <input checked="" type="checkbox"/> 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	: <input checked="" type="checkbox"/> 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	: <input checked="" type="checkbox"/> 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.
Ingestion	: <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.
<u>Over-exposure signs/symptoms</u>		
Eye contact	: <input checked="" type="checkbox"/> Universal Calibration Mix	No specific data.
	Praxair NGA Natural Gas Analyzer Mix	No specific data.
Inhalation	: <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
Skin contact	: <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
Ingestion	: <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

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

Section 4. First aid measures

Notes to physician	: <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.
Specific treatments	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	No specific treatment. No specific treatment.
Protection of first-aiders	: <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

Suitable extinguishing media	: <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.
Unsuitable extinguishing media	: <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

Specific hazards arising from the chemical	: <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.
Hazardous thermal decomposition products	: <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

Section 5. Fire-fighting measures

5.3 Advice for firefighters

Special protective actions for fire-fighters

: Universal Calibration 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.

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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.

Special protective equipment for fire-fighters

: Universal Calibration Mix

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

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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

For non-emergency personnel

: 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.

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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

Section 6. Accidental release measures

<p>For emergency responders : <input checked="" type="checkbox"/> Universal Calibration Mix</p> <p>Praxair NGA Natural Gas Analyzer Mix</p>	<p>breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.</p> <p>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".</p>
<p>6.2 Environmental precautions : <input checked="" type="checkbox"/> Universal Calibration Mix</p> <p>Praxair NGA Natural Gas Analyzer Mix</p>	<p>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).</p> <p>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).</p>
<p>6.3 Methods and materials for containment and cleaning up</p> <p>Methods for cleaning up : <input checked="" type="checkbox"/> Universal Calibration Mix</p> <p>Praxair NGA Natural Gas Analyzer Mix</p>	<p>Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.</p> <p>Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.</p>

Section 7. Handling and storage

7.1 Precautions for safe handling

<p>Protective measures : <input checked="" type="checkbox"/> Universal Calibration Mix</p> <p>Praxair NGA Natural Gas Analyzer Mix</p>	<p>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.</p> <p>Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid exposure - obtain special instructions before</p>
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Section 7. Handling and storage

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.

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. 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.

Advice on general occupational hygiene

: Universal Calibration Mix

Praxair NGA Natural Gas Analyzer Mix

7.2 Conditions for safe storage, including any incompatibilities

: Universal Calibration Mix

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.

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.

7.3 Specific end use(s)

Recommendations

: Universal Calibration Mix
Praxair NGA Natural Gas Analyzer Mix

Industrial applications, Professional applications.
Industrial applications, Professional applications.

Industrial sector specific solutions

: Universal Calibration Mix
Praxair NGA Natural Gas Analyzer Mix

Not applicable.
Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Universal Calibration Mix Carbon monoxide	ACGIH TLV (United States, 3/2016). TWA: 25 ppm 8 hours. TWA: 29 mg/m ³ 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 35 ppm 8 hours. TWA: 40 mg/m ³ 8 hours. CEIL: 200 ppm CEIL: 229 mg/m ³ NIOSH REL (United States, 10/2013). TWA: 35 ppm 10 hours. TWA: 40 mg/m ³ 10 hours. CEIL: 200 ppm CEIL: 229 mg/m ³ OSHA PEL (United States, 6/2016). TWA: 50 ppm 8 hours. TWA: 55 mg/m ³ 8 hours.
Praxair NGA Natural Gas Analyzer Mix n-Hexane	ACGIH TLV (United States, 3/2016). Absorbed through skin. TWA: 50 ppm 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 50 ppm 8 hours. TWA: 180 mg/m ³ 8 hours. NIOSH REL (United States, 10/2013). TWA: 50 ppm 10 hours. TWA: 180 mg/m ³ 10 hours. OSHA PEL (United States, 6/2016). TWA: 500 ppm 8 hours. TWA: 1800 mg/m ³ 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

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.

Section 8. Exposure controls/personal protection

- 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

Physical state	: Universal Calibration Mix	Gas.
	Praxair NGA Natural Gas Analyzer Mix	Gas.
Color	: Universal Calibration Mix	Not available.
	Praxair NGA Natural Gas Analyzer Mix	Not available.
Odor	: Universal Calibration Mix	Not available.
	Praxair NGA Natural Gas Analyzer Mix	Not available.
Odor threshold	: Universal Calibration Mix	Not available.
	Praxair NGA Natural Gas Analyzer Mix	Not available.
pH	: Universal Calibration Mix	Not available.
	Praxair NGA Natural Gas Analyzer Mix	Not available.
Melting point	: Universal Calibration Mix	Not available.
	Praxair NGA Natural Gas Analyzer Mix	Not available.
Boiling point	: Universal Calibration Mix	Not available.
	Praxair NGA Natural Gas Analyzer Mix	Not available.
Flash point	: Universal Calibration Mix	Closed cup: <-18°C (<-0.4°F)
	Praxair NGA Natural Gas Analyzer Mix	Closed cup: <-18°C (<-0.4°F)

Section 9. Physical and chemical properties

Evaporation rate	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Not available. Not available.
Flammability (solid, gas)	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat. Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
Lower and upper explosive (flammable) limits	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Not available. Not available.
Vapor pressure	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Not available. Not available.
Vapor density	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Not available. Not available.
Relative density	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Not available. Not available.
Solubility	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Very slightly soluble in the following materials: cold water and hot water. Not available.
Partition coefficient: n-octanol/water	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Not available. Not available.
Auto-ignition temperature	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Not available. Not available.
Decomposition temperature	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Not available. Not available.
Viscosity	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Not available. Not available.

Section 10. Stability and reactivity

10.1 Reactivity	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	The product is stable. The product is stable.
10.3 Possibility of hazardous reactions	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.

Section 10. Stability and reactivity

10.4 Conditions to avoid	: <input checked="" type="checkbox"/> 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	: <input checked="" type="checkbox"/> 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	: <input checked="" type="checkbox"/> 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 Gas.	Rat Rat	1900 mg/m ³ 1807 ppm	4 hours 4 hours
Praxair NGA Natural Gas Analyzer Mix 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

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Section 11. Toxicological information

Teratogenicity

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
Universal Calibration Mix Carbon monoxide	Category 1	Not determined	blood 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.

Ingestion : 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

Section 11. Toxicological information

Eye contact	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	No specific data. No specific data.
Inhalation	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
Skin contact	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
Ingestion	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations 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	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	No known significant effects or critical hazards. No known significant effects or critical hazards.
Carcinogenicity	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	No known significant effects or critical hazards. No known significant effects or critical hazards.
Mutagenicity	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	No known significant effects or critical hazards. No known significant effects or critical hazards.
Teratogenicity	: <input checked="" type="checkbox"/> Universal Calibration Mix Praxair NGA Natural Gas Analyzer Mix	May damage the unborn child. No known significant effects or critical hazards.

Section 11. Toxicological information

- Developmental effects** : Universal Calibration Mix No known significant effects or critical hazards.
Praxair NGA Natural Gas Analyzer Mix No known significant effects or critical hazards.
- Fertility effects** : 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 _{ow}	BCF	Potential
Praxair NGA Natural Gas Analyzer Mix n-Hexane	4	501.187	high

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

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

Section 13. Disposal considerations

13.1 Waste treatment methods

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.






Section 13. Disposal considerations

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

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN1954	UN1954	UN1954	UN1954	UN1954
UN proper shipping name	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)
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environmental hazards	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.
Remarks Requires Dangerous Goods BOL
- 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
- 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

Section 14. Transport information

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 Fire hazard
 Sudden release of pressure
 Immediate (acute) health hazard
 Delayed (chronic) health hazard
 Praxair NGA Natural Gas Analyzer Fire hazard
 Mix
 Sudden release of pressure
 Immediate (acute) health hazard
 Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
<input checked="" type="checkbox"/> Universal Calibration Mix Carbon monoxide	≤0.2	Yes.	Yes.	No.	Yes.	Yes.
Praxair NGA Natural Gas Analyzer Mix n-Hexane	≤0.2	Yes.	No.	No.	Yes.	Yes.

Section 15. Regulatory information

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 contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
<input checked="" type="checkbox"/> Universal Calibration Mix Carbon monoxide	No.	Yes.	-	-

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

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

Section 16. Other information

History

Date of issue : 09/06/2017

Date of previous issue : 08/28/2014.

Version : 4

✔ Indicates information that has changed from previously issued version.

Notice to reader

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