

# Cynthia Acid Gas

## SECTION 1. IDENTIFICATION

|   |   |
|---|---|
| <b>Product Identifier</b>               | Cynthia Acid Gas  |
| <b>Other Means of Identification</b>    | Sour Gas, Raw Sour Gas, Acid Gas  |
| <b>Product Family</b>                   | Produced Gas  |
| <b>Recommended Use</b>                  | Process feedstock. Gas plant feedstock.   |
| <b>Restrictions on Use</b>              | None known.   |
| <b>Manufacturer/Supplier Identifier</b> | Keyera Corp.<br>Suite 200, The Ampersand, West Tower<br>144 - 4th Avenue SW<br>Calgary, Alberta T2P 3N4 |
| <b>Emergency Phone No.</b>              | Keyera Corp., 1-403-205-8300, (24 hr)   |

## SECTION 2. HAZARD IDENTIFICATION

### Classification

Flammable gas - Category 1; Simple asphyxiant - Category 1; Acute toxicity (Oral) - Category 4; Acute toxicity (Dermal) - Category 4; Acute toxicity (Inhalation) - Category 1; Skin irritation - Category 2; Eye irritation - Category 2A

### Label Elements



Signal Word:  
Danger

### Hazard Statement(s):

- Extremely flammable gas.
- Fatal if inhaled.
- Causes serious eye irritation.
- Causes skin irritation.
- Toxic to aquatic life.

### Precautionary Statement(s):

#### Prevention:

- Do not handle until all safety precautions have been read and understood.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Use explosion-proof electrical, ventilating, and lighting equipment.
- Use only non-sparking tools.
- Do not breathe gas, vapours.
- Wear protective gloves/protective clothing.
- In case of inadequate ventilation wear respiratory protection (NIOSH approved self-contained breathing

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**Response:**

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTRE or doctor.  
 If skin irritation or rash occurs: Get medical advice/attention.  
 If eye irritation persists: Get medical advice or attention.  
 In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Eliminate all ignition sources if safe to do so.

**Storage:**

Store in accordance with local, regional, national and international regulations. Store in a well-ventilated place. Keep container tightly closed.

**Disposal:**

Dispose of contents and container in accordance with local, regional, national and international regulations.

**Other Hazards**

**EMERGENCY OVERVIEW :**

**FLAMMABLE GAS.** Extremely flammable. May form flammable/explosive gas-air mixtures. Electrostatic charges may be generated during handling. Electrostatic discharges may cause fire.

**CONTAINS HYDROGEN SULFIDE.** Product may contain significant quantities of dissolved hydrogen sulfide gas. H<sub>2</sub>S has a broad range of effects dependent on the airborne concentration and length of exposure: 0.02 ppm odour threshold, smell of rotten eggs; 10 ppm eye and respiratory tract irritation; 100 ppm coughing, headache, dizziness, nausea, eye irritation, loss of sense of smell in minutes; 200 ppm potential for pulmonary edema after >20-30 minutes; 500 ppm loss of consciousness after short exposures, potential for respiratory arrest; >1000 ppm immediate loss of consciousness, may lead rapidly to death, prompt cardiopulmonary resuscitation may be required. Do not depend on sense of smell for warning. H<sub>2</sub>S causes rapid olfactory fatigue (deadens sense of smell). There is no evidence that H<sub>2</sub>S will accumulate in the body tissue after repeated exposure.

**General Hygiene Comments :**

Do NOT eat, drink or store food in work areas.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name    | CAS No.   | %             | Other Identifiers        |
|------------------|-----------|---------------|--------------------------|
| Nitrogen         | 7727-37-9 | 0.15 - 0.50   | Not available            |
| Carbon Dioxide   | 124-38-9  | 97.00 - 98.00 | Carbonic acid gas        |
| Hydrogen Sulfide | 7783-06-4 | 1.50 - 2.00   | Sulfur hydride, acid gas |
| Methane          | 74-82-8   | 0.50 - 1.00   | Methyl hydride           |
| Ethane           | 74-84-0   | 0.10 - 0.25   | Ethyl hydride            |
| Propane          | 74-98-6   | 0.01 - 0.10   | Propyl hydride           |
| Isobutane        | 75-28-5   | 0.01 - 0.10   | 2-methylpropane          |
| n-Butane         | 106-97-8  | 0.01 - 0.10   | Butyl hydride            |
| Isopentane       | 78-78-4   | 0.01 - 0.10   | 2-methylbutane           |
| n-Pentane        | 109-66-0  | 0.01 - 0.10   | Pentyl hydride           |
| Hexanes          | 110-54-3  | 0.01 - 0.10   | Not available            |
| Heptanes+        | 142-82-5  | 0.01 - 0.10   | Not available            |

**Notes**

Concentrations are expressed in % volume/volume.

**CONTAINS HYDROGEN SULFIDE : TOXIC BY INHALATION**

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### SECTION 4. FIRST-AID MEASURES

#### First-aid Measures

##### Inhalation

CONTAINS HYDROGEN SULFIDE. In case of oxygen deficiency: take precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment). Move to fresh air. Keep at rest in a position comfortable for breathing. Never give anything by mouth to an unconscious person. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor.

##### Skin Contact

If persistent irritation occurs, obtain medical attention.

Liquefied gas:

Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice or attention.

##### Eye Contact

If persistent irritation occurs, obtain medical attention.

Liquefied gas:

Immediately call a Poison Centre or doctor and follow their advice.

##### Ingestion

Not a likely route of exposure.

#### Most Important Symptoms and Effects, Acute and Delayed

If inhaled:

CONTAINS HYDROGEN SULPHIDE. Hydrogen sulfide is extremely toxic. H<sub>2</sub>S has a broad range of effects dependent on the airborne concentration and length of exposure: 0.02 ppm odour threshold, smell of rotten eggs; 10 ppm eye and respiratory tract irritation; 100 ppm coughing, headache, dizziness, nausea, eye irritation, loss of sense of smell in minutes, 200 ppm potential for pulmonary edema after >20-30 minutes; 500 ppm loss of consciousness after short exposures, potential for respiratory arrest; >1000 ppm immediate loss of consciousness, may lead rapidly to death, prompt cardiopulmonary resuscitation may be required. Do NOT depend on sense of smell for warning. H<sub>2</sub>S causes rapid olfactory fatigue (deadens sense of smell). There is no evidence that H<sub>2</sub>S will accumulate in the body tissue after repeated exposure.

If on skin:

Direct contact with the pressurized gas release can chill or freeze the skin (frostbite). Symptoms of more severe frostbite include a burning sensation and stiffness. The skin may become waxy white or yellow. Blistering, tissue death and infection may develop in severe cases.

#### Immediate Medical Attention and Special Treatment

##### Special Instructions

Treat symptomatically. CNS asphyxiant. May cause rhinitis, bronchitis, and occasionally pulmonary edema after severe exposure. Consider oxygen therapy. Consult a Poison Control Centre for guidance.

### SECTION 5. FIRE-FIGHTING MEASURES

#### Extinguishing Media

##### Suitable Extinguishing Media

Small fire: Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.

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### Unsuitable Extinguishing Media

Do not use water in a stream or jet.

### Specific Hazards Arising from the Product

CONTAINS HYDROGEN SULFIDE : TOXIC BY INHALATION. Flammable gas. Can easily ignite. Can readily form explosive mixtures with air at room temperature. Vapours may accumulate in hazardous amounts in low-lying areas especially inside confined spaces (sumps, drains, sewers), resulting in a fire and/or health hazard.

### Special Protective Equipment and Precautions for Fire-fighters

Wear full protective clothing and self-contained breathing apparatus. Stop leak/source before attempting to put out the fire. Product could form an explosive mixture and reignite. If the leak/source cannot be stopped, let the fire burn itself out. Wear full protective clothing and self-contained breathing apparatus.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment, and Emergency Procedures

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Evacuate downwind locations. Do not operate electrical equipment. Vent contaminated area thoroughly. Shut off leaks, if possible, without personal risks. Eliminate all ignition sources. Use grounded, explosion-proof equipment. Take precautionary measures against static discharge. Before entry, especially into confined areas, check atmosphere with an appropriate monitor. All personnel involved in containment and cleanup should wear the appropriate protective equipment, including self-contained breathing apparatus.

### Environmental Precautions

It is good practice to prevent releases into the environment.

### Methods and Materials for Containment and Cleaning Up

Ventilate the area to prevent the gas from accumulating, especially in confined spaces. Keep out of low areas; released vapours may be heavier than air and travel along the ground, or collect in sewers, basements, or tanks.

### Other Information

Report leaks/spills to local health, safety and environmental authorities, as required.

## SECTION 7. HANDLING AND STORAGE

### Precautions for Safe Handling

Only use where there is adequate ventilation. Prevent uncontrolled release of product. Eliminate heat and ignition sources such as sparks, open flames, hot surfaces and static discharge. Post "No Smoking" signs. Electrically bond and ground equipment. Ground clips must contact bare metal. Check for oxygen deficiency in work area. If used in a confined space, check for oxygen deficiency before worker entry and during work. In event of a spill or leak, immediately exit the area, use an escape-type respirator if the situation warrants such use. Do NOT enter confined spaces (tanks, vessels, etc) without using a supplied air or self contained breathing apparatus (SCBA) protection.

### Conditions for Safe Storage

Store in a well ventilated area away from all sources of ignition. Avoid storage in confined spaces or near incompatible materials, oxidizers, or materials that support combustion.

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### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| Control Parameters | ACGIH TLV®      |           | OSHA PEL |         | AIHA WEEL |     |
|--------------------|-----------------|-----------|----------|---------|-----------|-----|
|                    | TWA             | STEL      | TWA      | Ceiling | 8-hr TWA  | TWA |
| Carbon Dioxide     | 5000 ppm        | 30000 ppm |          |         |           |     |
| Hydrogen Sulfide   | 1 ppm           | 5 ppm     |          | 20 ppm  |           |     |
| Methane            | Not established |           |          |         |           |     |
| Ethane             | Not established |           |          |         |           |     |
| Propane            | 1000 ppm        |           |          |         |           |     |
| Isobutane          |                 | 1000 ppm  |          |         |           |     |
| n-Butane           |                 | 1000 ppm  | 800 ppm  |         |           |     |
| Isopentane         | 600 ppm         |           |          |         |           |     |
| n-Pentane          | 1000 ppm        |           | 1000 ppm |         |           |     |
| Hexanes            | 50 ppm Skin     |           | 500 ppm  |         |           |     |
| Heptanes+          | 400 ppm         | 500 ppm   | 500 ppm  |         |           |     |

#### Appropriate Engineering Controls

Do not allow product to accumulate in the air in work or storage areas, or in confined spaces. Use local exhaust and general ventilation, if necessary, to maintain air oxygen levels at a minimum of 18%. If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required. Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas where this product is used and stored. Control static electricity discharges which includes bonding of equipment to ground.

#### Individual Protection Measures

##### Eye/Face Protection

Not required if product is used as directed. Product can cause frostbite.

##### Skin Protection

Not required, if used as directed.

##### Respiratory Protection

For routine situations where potential exposure to harmful vapours is a possibility: use an appropriate respiratory protection program that meets OSHA's 29 CFR 1910.134 approved respirator requirements whenever workplace conditions warrant respirator use.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Basic Physical and Chemical Properties

|  |  |
|--|--|
| <b>Appearance</b>                                  | Colourless gas.  |
| <b>Odour</b>                                       | Hydrocarbon, very strong rotten egg smell                    |
| <b>Odour Threshold</b>                             | 0.008 - 1 ppm (Hydrogen Sulfide) (detection and recognition) |
| <b>Melting Point/Freezing Point</b>                | Not applicable (melting); Not applicable (freezing)          |
| <b>Flammability (solid, gas)</b>                   | Extremely flammable gas.                                     |
| <b>Upper/Lower Flammability or Explosive Limit</b> | Not available  |
| <b>Vapour Pressure</b>                             | Not available  |
| <b>Vapour Density (air = 1)</b>                    | < 1.0  |

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|                                  |                                |
|----------------------------------|--------------------------------|
| <b>Vapour Density (air = 1)</b>  | < 1.0                          |
| <b>Solubility</b>                | Practically insoluble in water |
| <b>Auto-ignition Temperature</b> | Not available                  |
| <b>Decomposition Temperature</b> | Not available                  |

### Other Information

|                          |                       |
|--------------------------|-----------------------|
| <b>Physical State</b>    | Gas                   |
| <b>Molecular Formula</b> | Not available         |
| <b>Molecular Weight</b>  | 45 g/mol (calculated) |

## SECTION 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive.

### Chemical Stability

Normally stable.

### Possibility of Hazardous Reactions

None expected under normal conditions of storage and use.

### Conditions to Avoid

Open flames, sparks, static discharge, heat and other ignition sources. May form explosive mixture on contact with air.

### Incompatible Materials

Strong oxidizing agents (e.g. perchloric acid).  
Corrosive to: carbon steel, copper, and other metals.

### Hazardous Decomposition Products

Hazardous decomposition products are not expected to form during normal storage.

## SECTION 11. TOXICOLOGICAL INFORMATION

### Likely Routes of Exposure

Inhalation; eye contact.

### Acute Toxicity

| Chemical Name    | LC50   | LD50 (oral)    | LD50 (dermal)  |
|------------------|--|----------------|----------------|
| Carbon Dioxide   | Not available  | Not available  | Not applicable |
| Hydrogen Sulfide | 444 ppm (rat) (4-hour exposure)                      | Not applicable | Not applicable |
| Methane          | Not available  | Not available  | Not applicable |
| Ethane           | Not available  | Not available  | Not applicable |
| Propane          | > 800000 ppm (rat) (30-minute exposure)              | Not applicable | Not applicable |
| Isobutane        | 368000 mg/kg (male mouse) (4-hour exposure) (vapour) | > 5000 mg/kg   | > 5000 mg/kg   |
| n-Butane         | 658 mg/L (rat) (4-hour exposure)                     | Not available  | Not available  |

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|            |  |                        |                       |
|------------|--|------------------------|-----------------------|
| Isopentane | 140000 ppm (mouse)<br>(2-hour exposure) (vapour) | > 2000 mg/kg (rat)     | Not available         |
| n-Pentane  | 6106 ppm (rat) (4-hour<br>exposure)              | > 2000 mg/kg (rat)     | Not available         |
| Hexanes    | 73680 ppm (rat) (4-hour<br>exposure) (vapour)    | 32290 mg/kg (male rat) | > 3295 mg/kg (rabbit) |
| Heptanes+  | ~ 25000 ppm (rat) (4-hour<br>exposure)           | > 15000 mg/kg (rat)    | Not available         |

### Skin Corrosion/Irritation

Skin irritant, can also irritate mucous membranes.

### Serious Eye Damage/Irritation

Contact irritant, irritating to the moist membranes of eyes and respiratory tract. Symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

### STOT (Specific Target Organ Toxicity) - Single Exposure

#### Inhalation

CONTAINS HYDROGEN SULFIDE! : Short term exposure effects may include depression of the central nervous system, resulting in dizziness, light-headedness, headache, nausea, or unconsciousness. Death by asphyxiation or from the toxic effects of hydrogen sulfide is a danger from prolonged exposure. A high concentration can displace oxygen in the air. If less oxygen is available to breathe, symptoms such as rapid breathing, rapid heart rate, clumsiness, emotional upsets and fatigue can result. As less oxygen becomes available, nausea and vomiting, collapse, convulsions, coma and death can occur. Symptoms occur more quickly with physical effort. Lack of oxygen can cause permanent damage to organs including the brain and heart. TOXIC BY INHALATION.

#### Skin Absorption

Not normally an expected route of exposure. SKIN IRRITANT.

#### Ingestion

Not an expected route of exposure.

### Aspiration Hazard

Not known to be an aspiration hazard.

### STOT (Specific Target Organ Toxicity) - Repeated Exposure

Not expected to cause organ damage from prolonged or repeated exposure.

### Respiratory and/or Skin Sensitization

Not known to be a respiratory sensitizer. Not a skin sensitizer. CONTAINS HYDROGEN SULFIDE. Take all necessary precautions to avoid inhalation.

### Carcinogenicity

Not known to cause cancer.

### Reproductive Toxicity

#### Development of Offspring

Material in general is not expected to cause harm. The material in general is not expected to produce teratogenic or embryotoxic effects. Not known to harm the unborn child.

#### Sexual Function and Fertility

Material in general is not expected to cause harm. The material in general is not expected to have toxic reproductive effects.

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**Effects on or via Lactation**

No information was located.

**Germ Cell Mutagenicity**

Material in general is not expected to cause harm. The material in general is not expected to produce mutagenic effects.

**Interactive Effects**

Not expected to be a hazard.

**Other Information**

CONTAINS HYDROGEN SULFIDE. H<sub>2</sub>S has a broad range of effects dependent on the airborne concentration and length of exposure: 0.02 ppm odor threshold, smell of rotten eggs; 10 ppm eye and respiratory tract irritation; 100 ppm coughing, headache, dizziness, nausea, eye irritation, loss of sense of smell in minutes; 200 ppm potential for pulmonary edema after >20-30 minutes; 500 ppm loss of consciousness after short exposures, potential for respiratory arrest; >1000 ppm immediate loss of consciousness, may lead rapidly to death, prompt cardiopulmonary resuscitation may be required. Do not depend on sense of smell for warning. H<sub>2</sub>S causes rapid olfactory fatigue (deadens sense of smell). There is no evidence that H<sub>2</sub>S will accumulate in the body tissue after repeated exposure.

## SECTION 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Harmful to aquatic life, animals, birds.

**Persistence and Degradability**

No ingredient of this product or its degradation products is known to be highly persistent.

**Bioaccumulative Potential**

This product and its degradation products are not known to bioaccumulate.

**Mobility in Soil**

If released, this material will move rapidly through and into the environment.

**Other Adverse Effects**

There is no information available.

## SECTION 13. DISPOSAL CONSIDERATIONS

**Disposal Methods**

Material Disposal:

Do not discharge into areas where there is a risk of forming an explosive mixture with air.

Local Legislation:

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 and must be complied with.

## SECTION 14. TRANSPORT INFORMATION

| Regulation   | UN No. | Proper Shipping Name                     | Transport Hazard Class(es) | Packing Group  |
|--------------|--------|--|----------------------------|----------------|
| Canadian TDG | 1971   | COMPRESSED GAS, TOXIC, FLAMMABLE, N.O.S. | 2.3 (2.1)                  | Not applicable |
| US DOT       | 1971   | COMPRESSED GAS, TOXIC, FLAMMABLE, N.O.S. | 2.3 (2.1)                  | Not applicable |

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**Special Precautions** Please note: CONTAINS HYDROGEN SULFIDE : TOXIC BY INHALATION.

**Other Information** Transport Class and Packing Group assigned are based on the general physical properties and composition of the material or materials tested.

**Proof of Dangerous Goods Classification**

**Date of Classification** October 09, 2024  
**Technical Name** COMPRESSED GAS, TOXIC, FLAMMABLE, N.O.S.  
**Classification** 2.3 (2.1)  
**Classification Method** Analysis performed by Bureau Veritas Canada

### SECTION 15. REGULATORY INFORMATION

**Safety, Health and Environmental Regulations**

This section is not required by WHMIS.

### SECTION 16. OTHER INFORMATION

**NFPA Rating**      **Health - 4**      **Flammability - 4**      **Instability - 0**

**SDS Prepared By** Bureau Veritas Canada  
**Phone No.** 1-800-386-7247

**Date of Preparation** October 09, 2024  
**Date of Last Revision** October 09, 2024

**Revision Indicators** Not applicable

**Key to Abbreviations** ACGIH® = American Conference of Governmental Industrial Hygienists  
 OSHA = US Occupational Safety and Health Administration  
 RTECS® = Registry of Toxic Effects of Chemical Substances

**References** CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS).  
 Registry of Toxic Effects of Chemical Substances (RTECS®) database. Dassault Systèmes/BIOVIA ("BIOVIA"). Available from Canadian Centre for Occupational Health and Safety (CCOHS).

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accurate as possible, as of the date of preparation. The reader is invited to contact Keyera Corporation at the address shown to ensure the information is up to date or to obtain further information related to an unusual or other use.

SDS representative sample(s) :

Cynthia 01-28-049-10-W5M Acid Gas Reflux Accumulator