

Brazeau Acid Gas

SECTION 1. IDENTIFICATION

Product Identifier	Brazeau Acid Gas
Other Means of Identification	Sour Gas, Raw Sour Gas, Acid Gas
Product Family	Produced Gas
Recommended Use	Process feedstock. Gas plant feedstock.
Restrictions on Use	None known.
Manufacturer/Supplier Identifier	Keyera Corp. Suite 200, The Ampersand, West Tower 144 - 4th Avenue SW Calgary, Alberta T2P 3N4
Emergency Phone No.	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

Brazeau Acid Gas

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. H₂S 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. H₂S causes rapid olfactory fatigue (deadens sense of smell). There is no evidence that H₂S 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	0.01 - 0.10	Not available
Carbon Dioxide	124-38-9	74.00 - 76.00	Carbonic acid gas
Hydrogen Sulfide	7783-06-4	22.00 - 24.00	Sulfur hydride, acid gas
Methane	74-82-8	1.00 - 1.50	Methyl hydride
Ethane	74-84-0	0.15 - 0.50	Ethyl hydride
Propane	74-98-6	0.05 - 0.15	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	Trace	Not available
Heptanes+	142-82-5	0.15 - 0.50	Not available

Notes

Concentrations are expressed in % volume/volume.

CONTAINS HYDROGEN SULFIDE : TOXIC BY INHALATION

Brazeau Acid Gas

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. H₂S 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. H₂S causes rapid olfactory fatigue (deadens sense of smell). There is no evidence that H₂S 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.

Brazeau Acid Gas

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.

Brazeau Acid Gas

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

Appearance	Colourless gas.
Odour	Hydrocarbon, very strong rotten egg smell
Odour Threshold	0.008 - 1 ppm (Hydrogen Sulfide) (detection and recognition)
Melting Point/Freezing Point	Not applicable (melting); Not applicable (freezing)
Flammability (solid, gas)	Extremely flammable gas.
Upper/Lower Flammability or Explosive Limit	<= 45% (Hydrogen Sulfide) (upper); >= 4.3% (Hydrogen Sulfide) (lower)
Vapour Pressure	Not available
Vapour Density (air = 1)	< 1.0

Product Identifier: Brazeau Acid Gas
 Date of Preparation: October 09, 2024
 Date of Last Revision: October 09, 2024

Brazeau Acid Gas

Vapour Density (air = 1)	< 1.0
Solubility	Practically insoluble in water
Auto-ignition Temperature	232 °C (estimated) (Hydrogen Sulfide)
Decomposition Temperature	Not available

Other Information

Physical State	Gas
Molecular Formula	Not available
Molecular Weight	41 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

Product Identifier: Brazeau Acid Gas
Date of Preparation: October 09, 2024
Date of Last Revision: October 09, 2024

Brazeau Acid Gas

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

Brazeau Acid Gas

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. H₂S 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. H₂S causes rapid olfactory fatigue (deadens sense of smell). There is no evidence that H₂S 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

Product Identifier: Brazeau Acid Gas

Date of Preparation: October 09, 2024

Date of Last Revision: October 09, 2024

Brazeau Acid Gas

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).

Disclaimer This SDS provides safety information and was developed for employees, customers and agents of Keyera Partnership from data obtained from the sample(s) submitted for analysis. The information may not be valid or complete if the product or material is used in combination with other products or materials, or in any process. This information is intended for reasonable normal usage and recommended practices, and to underscore the potential hazards that may be inherent to the nature of the product or material. Although every effort is made to ensure accuracy and completeness of the contained information, it is understood that Bureau Veritas Canada makes no warranty as to the accuracy or completeness of information and assumes no liability for any damage or loss suffered as result of any inaccuracy or incompleteness therein. This information is considered to be as accurate as possible, as of the date of

Brazeau Acid Gas

preparation. The reader is invited to contact Keyera Partnership 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) :

Brazeau 03-12-046-14-W5M Acid Gas