

SECTION 1: Identification

1.1. Product identifier

Product form	: Mixtures
Trade name	: M435
Product code	: CA-2002-05255
Other means of identification	: Hydrogen (35%) in Argon

1.2. Recommended use and restrictions on use

Recommended uses and restrictions	: Test/Calibration gas Gas mixture for plasma cutting Shielding gas for arc welding
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1.3. Supplier

RS Josef Group
201 Basaltic Rd, Concord
Canada L4K 1G4
T 416-658-1212

www.josefgases.com

1.4. Emergency telephone number

Emergency Number	1-613-996-6666 CANUTEC Call emergency number 24 hours a day. For routine information, contact your supplier or RS Josef Group sales representative.
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SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS-CA)

Flammable gases, Category 1	H220
Gases under pressure : Compressed gas	H280
Full text of H statements : see section 16	

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

Hazard pictograms (GHS-CA)	:	 
		GHS02 GHS04

Signal word (GHS-CA) : Danger

Hazard statements (GHS-CA) : H280 - Contains gas under pressure; may explode if heated
H220 - Extremely flammable gas
OSHA-H01 - May displace oxygen and cause rapid suffocation
CGA-HG04 - May form explosive mixtures with air
CGA-HG08 - Burns with invisible flame

Precautionary statements (GHS-CA) : P381 - In case of leakage, eliminate all ignition sources
P377 - Leaking gas fire: Do not extinguish unless leak can be stopped safely
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.
P403 - Store in a well-ventilated place
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P308+P313 - IF exposed or concerned: Get medical advice/attention
P280 - Wear eye protection, face protection, protective clothing, protective gloves
P271 - Use only outdoors or in a well-ventilated area
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52 °C/125 °F
CGA-PG05 - Use a back flow preventive device in the piping
CGA-PG06 - Close valve after each use and when empty
CGA-PG10 - Use only with equipment rated for cylinder pressure
CGA-PG14 - Approach suspected leak area with caution
CGA-PG21 - Open valve slowly

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS-CA)
Argon	Argon, compressed	(CAS-No.) 7440-37-1	65	Press. Gas (Comp.), H280
Hydrogen	Hydrogen, compressed / Hydrogen molecule H ₂ / Hydrgen	(CAS-No.) 1333-74-0	35	Flam. Gas 1, H220 Press. Gas (Comp.), H280

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.
- First-aid measures after skin contact : Adverse effects not expected from this product.
- First-aid measures after eye contact : Adverse effects not expected from this product.
- First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after inhalation : May displace oxygen and cause rapid suffocation.
- Symptoms/effects after skin contact : Adverse effects not expected from this product.
- Symptoms/effects after eye contact : Adverse effects not expected from this product.
- Symptoms/effects after ingestion : Ingestion is not considered a potential route of exposure.
- Symptoms/effects upon intravenous administration : Not known.
- Chronic symptoms : Adverse effects not expected from this product.

4.3. Immediate medical attention and special treatment, if necessary

- Other medical advice or treatment : If you feel unwell, seek medical advice. If breathing is difficult, give oxygen.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

- Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

5.2. Unsuitable extinguishing media

- Unsuitable extinguishing media : Do not use water jet to extinguish.

5.3. Specific hazards arising from the hazardous product

- Fire hazard : This product is flammable.
- Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. May form flammable/explosive vapour-air mixture.
- Hazardous combustion products : None

5.4. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Exposure to fire may cause containers to rupture/explode. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.
- Protection during firefighting : Standard protective clothing and equipment (e.g. Self Contained Breathing Apparatus) for fire fighters. Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Ensure adequate ventilation.

Personal Precautions, Protective Equipment and Emergency Procedures : EVACUATE ALL PERSONNEL FROM AFFECTED AREA. Use appropriate protective equipment. If leak is on user's equipment, be certain to purge piping before attempting repairs. If leak is on a container or container valve contact RS Josef Group.

6.2. Methods and materials for containment and cleaning up

For containment : Try to stop release if without risk.
 Methods for cleaning up : Dispose of contents/container in accordance with local/regional/national/international regulations.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Use only non-sparking tools.
 Hygiene measures : Do not eat, drink or smoke when using this product.
 Additional hazards when processed : Pressurized container: Do not pierce or burn, even after use. Use only with equipment rated for cylinder pressure. Close valve after each use and when empty. Handle empty containers with care because residual vapours are flammable. In use may form flammable vapour-air mixture.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.
 Storage conditions : Do not expose to temperatures exceeding 52 °C/ 125 °F. Keep container closed when not in use. Protect cylinders from physical damage; do not drag, roll, slide or drop. Store in well ventilated area.
 Incompatible products : None known.
 Incompatible materials : Oxidizing materials. Air.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure exposure is below occupational exposure limits (where available). Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Oxygen detectors should be used when asphyxiating gases may be released. Consider the use of a work permit system e.g. for maintenance activities.
 Environmental exposure controls : Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gloves. Safety glasses. Protective clothing. Safety shoes.

Hand protection:

Wear working gloves when handling gas containers.

Eye protection:

Wear safety glasses with side shields.

Skin and body protection:

Wear suitable protective clothing, e.g. lab coats, coveralls or flame resistant clothing.

Respiratory protection:

None necessary during routine operations. See Sections 5 & 6



Thermal hazard protection:

None necessary during routine operations.

Other information:

Wear safety shoes while handling containers.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Appearance	: Clear, colorless gas.
Colour	: Colourless
Odour	: Odourless
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: See Section 2.1 and 2.2
Vapour pressure	: No data available
Vapour pressure at 50 °C	: No data available
Relative density	: No data available
Solubility	: Water: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available
Explosive properties	: Without adequate ventilation formation of explosive mixtures may be possible.
Oxidising properties	: None.
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	: None known.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Can form explosive mixture with air.
Conditions to avoid	: None under recommended storage and handling conditions (see section 7).
Incompatible materials	: Oxidizing materials. Air.
Hazardous decomposition products	: Under normal conditions of storage and use hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

Likely routes of exposure : Inhalation.

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified

Acute toxicity (inhalation) : Not classified

Argon (7440-37-1)	
LC50 inhalation rat (ppm)	820000 ppm/4h

Hydrogen (1333-74-0)	
LC50 inhalation rat (ppm)	820000 ppm/4h

Skin corrosion/irritation : Not classified
 Serious eye damage/irritation : Not classified
 Respiratory or skin sensitization : Not classified
 Germ cell mutagenicity : Not classified
 Carcinogenicity : Not classified

Reproductive toxicity : Not classified
 STOT-single exposure : Not classified
 STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

Argon (7440-37-1)	
Persistence and degradability	No ecological damage caused by this product.

Hydrogen (1333-74-0)	
Persistence and degradability	No ecological damage caused by this product.

12.3. Bioaccumulative potential

Argon (7440-37-1)	
Log Pow	Not applicable for inorganic gases.
Bioaccumulative potential	No ecological damage caused by this product.

Hydrogen (1333-74-0)	
BCF fish 1	(no bioaccumulation expected)
Log Pow	Not applicable for inorganic gases.
Bioaccumulative potential	No ecological damage caused by this product.

12.4. Mobility in soil

Argon (7440-37-1)	
Log Pow	Not applicable for inorganic gases.
Ecology - soil	No ecological damage caused by this product.

Hydrogen (1333-74-0)	
Log Pow	Not applicable for inorganic gases.
Ecology - soil	No ecological damage caused by this product.

12.5. Other adverse effects

Effect on ozone layer : No known effects from this product.

GWPmix comment : No known effects from this product.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Contact supplier if guidance is required. Do not discharge into any place where its accumulation could be dangerous. Ensure that the emission levels from local regulations or operating permits are not exceeded. Waste gas should be flared through a suitable burner with flash back arrestor. Do not discharge into areas where there is a risk of forming an explosive mixture with air.

Product/Packaging disposal recommendations : Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at www.cganet.com for more guidance on suitable disposal methods.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

Transportation of Dangerous Goods

UN-No. (TDG) : UN1954
 TDG Primary Hazard Classes : 2.1 - Class 2.1 - Flammable Gas.
 Transport Document Description : UN1954 Compressed gas, flammable, n.o.s., 2.1
 Proper Shipping Name : Compressed gas, flammable, n.o.s.

Hazard labels (TDG) : 2.1 - Flammable gases



TDG Special Provisions : 16 - (1) The technical name of at least one of the most dangerous substances that predominantly contributes to the hazard or hazards posed by the dangerous goods must be shown, in parentheses, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(ii)(A) of Part 3 (Documentation). The technical name must also be shown, in parentheses, on a small means of containment or on a tag following the shipping name in accordance with subsections 4.11(2) and (3) of Part 4 (Dangerous Goods Safety Marks). (2) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a shipping document or on a small means of containment when Canadian law for domestic transport or an international convention for international transport prohibits the disclosure of the technical name: (a) UN1544, ALKALOID SALTS, SOLID, N.O.S. or ALKALOIDS, SOLID, N.O.S; (b) UN1851, MEDICINE, LIQUID, TOXIC, N.O.S; (c) UN3140, ALKALOID SALTS, LIQUID, N.O.S. or ALKALOIDS, LIQUID, N.O.S; (d) UN3248, MEDICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S; or (e) UN3249, MEDICINE, SOLID, TOXIC, N.O.S. An example in Canada is the "Food and Drugs Act". (3) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a small means of containment: (a) UN2814, INFECTIOUS SUBSTANCE, AFFECTING HUMANS; or (b) UN2900, INFECTIOUS SUBSTANCE, AFFECTING ANIMALS. SOR/2014-306

ERAP Index : 3 000
 Explosive Limit and Limited Quantity Index : 0.125 L
 Passenger Carrying Ship Index : Forbidden
 Excepted quantities (TDG) : E0
 Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : Forbidden

14.2. Transport information/DOT - USA

Department of Transport

DOT NA no. : UN1954
 UN-No.(DOT) : 1954
 DOT Symbols : G - Identifies PSN requiring a technical name
 Transport Document Description : UN1954 Compressed gas, flammable, n.o.s., 2.1
 Proper Shipping Name (DOT) : Compressed gas, flammable, n.o.s.
 Contains Statement Field Selection (DOT) : DOT_TECHNICAL - Proper Shipping Name - Technical (DOT)
 Class (DOT) : 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115
 Division (DOT) : 2.1

Hazard labels (DOT) : 2.1 - Flammable gas



Dangerous for the environment : No

DOT Packaging Exceptions (49 CFR 173.xxx) : 306
 DOT Packaging Non Bulk (49 CFR 173.xxx) : 302;305
 DOT Packaging Bulk (49 CFR 173.xxx) : 314;315
 DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden
 DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 150 kg

DOT Vessel Stowage Location : D - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.

DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

Other information : No supplementary information available.

14.3. Air and sea transport

IMDG

UN-No. (IMDG) : 1954
 Proper Shipping Name (IMDG) : Compressed gas, flammable, n.o.s.
 Transport Document Description (IMDG) : UN 1954 Compressed gas, flammable, n.o.s., 2.1
 Class (IMDG) : 2.1 - Flammable gases

IATA

UN-No. (IATA) : 1954
 Proper Shipping Name (IATA) : Compressed gas, flammable, n.o.s.
 Transport Document Description (IATA) : UN 1954 Compressed gas, flammable, n.o.s., 2.1
 Class (IATA) : 2.1 - Gases : Flammable

SECTION 15: Regulatory information

15.1. National regulations

Argon (7440-37-1)

Listed on the Canadian DSL (Domestic Substances List)

Hydrogen (1333-74-0)

Listed on the Canadian DSL (Domestic Substances List)

15.2. International regulations

Argon (7440-37-1)

Listed on the AICS (Australian Inventory of Chemical Substances)
 Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
 Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
 Listed on the Korean ECL (Existing Chemicals List)
 Listed on NZIoC (New Zealand Inventory of Chemicals)
 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
 Listed on the United States TSCA (Toxic Substances Control Act) inventory
 Listed on INSQ (Mexican National Inventory of Chemical Substances)

Hydrogen (1333-74-0)

Listed on the AICS (Australian Inventory of Chemical Substances)
 Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
 Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
 Listed on the Korean ECL (Existing Chemicals List)
 Listed on NZIoC (New Zealand Inventory of Chemicals)
 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
 Listed on the United States TSCA (Toxic Substances Control Act) inventory
 Listed on INSQ (Mexican National Inventory of Chemical Substances)

SECTION 16: Other information

Date of issue : 31/05/2018

Full text of H-statements:

H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated

SDS Canada (GHS)

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