



MATERIAL SAFETY DATA SHEET

MagneGas™

Rev. No.: 03

MSDS DATE: 09/19/2011

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: MagneGas™
SYNONYMS: None
PRODUCT CODES: None

MANUFACTURER: MagneGas Corporation
DIVISION: Tarpon Springs, FL
150 Rainville Road
Tarpon Springs, FL 34689

EMERGENCY PHONE: For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night

Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

OTHER CALLS: 727 934-3448 General Assistance

FAX PHONE: 727 934-6260

CHEMICAL NAME: Hydrogen
CHEMICAL FAMILY: Permanent Gas
CHEMICAL FORMULA: H₂

PRODUCT USE: MagneGas is the new GREEN metal cutting and welding fuel, it can also be substituted for Acetylene and Propane Gas.

SECTION 1 NOTES: A flammable gaseous fuel created as a homogeneous blend of several gasses.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT:</u>	<u>CAS NO.</u>	<u>% WT(VOL)</u>	<u>OSHA PEL-TLV</u> (ppm; mg/m3)	<u>ACGIH TLV-TWA</u> (ppm; mg/m3)	<u>SARA 313 REPORTABLE</u>
Hydrogen	1333-74-0	55 – 65%	None	Simple Asphyxiant	Yes, Pressure and Fire hazard
Carbon Monoxide	630-08-0	30 – 35%	50; 55	25	
Carbon Dioxide	124-38-9	1 – 2 %	5,000; 9,000	5,000; 9,000	
Trace Gases		.5 – 1 %			
Water Vapor	7732-18-5	Less than 5 PPM			

SECTION 2 NOTES: In MagneGas™, the above identified constituents are generally bonded together into clusters due to polarizations created by the electric arc.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Appearance and Odor: Clear gas, has a distinct hydrocarbon odor

Health Hazards: No known immediate health hazards

Physical Hazards: No known immediate physical hazards

NFPA Rating (Health, Fire, Reactivity): 2,4,1

Hazard Rating: Least- 0, Slight- 1, Moderate -2, High – 3, Extreme -4

ROUTES OF ENTRY: Inhalation



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POTENTIAL HEALTH EFFECTS

- EYES:** MagneGas™ is considered no more than minimally irritating to the eyes.
- SKIN:** MagneGas™ is considered no more than minimally invasive to the skin.
- INGESTION:** MagneGas™ is an unlikely route of exposure; this product is a gas at normal temperature and pressure.
- INHALATION:** Prolonged inhalation of pre-combustion vapors may result in loss of function, brain damage, and even death. There is a high concentration of carbon monoxide (CO) in the gas in its pre-combustion stage.

ACUTE HEALTH HAZARDS: There are no known long term health effects for this product.

CHRONIC HEALTH HAZARDS: There are no known long term health effects for this product.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to this product.

CARCINOGENICITY: This product is not listed by NTP, OSHA, or IARC.

SECTION 3 NOTES: None

SECTION 4: FIRST AID MEASURES

- EYES:** Flush with water. If irritation occurs, get medical attention.
- SKIN:** Flush skin with water- then wash with soap and water. If irritation occurs, get medical attention.
- INGESTION:** MagneGas™ is an unlikely route of exposure; this product is a gas at normal temperature and pressure.
- INHALATION:** Remove the victim to fresh air and provide oxygen if breathing is difficult. Get medical attention.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: *There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.*

SECTION 4 NOTES: None

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR, UPPER: 63.4%
(% BY VOLUME) **LOWER:** 7.6%

FLASH POINT:

F: 0⁰F
C: -18⁰C

METHOD USED: Cleveland closed cup

AUTOIGNITION TEMPERATURE:

F: 932⁰F
C: 500⁰C

NFPA HAZARD CLASSIFICATION

HEALTH: 2
FLAMMABILITY: 4
REACTIVITY: 1
OTHER:



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EXTINGUISHING MEDIA: Water, Dry chemical, Halon

SPECIAL FIRE FIGHTING PROCEDURES: MagneGas™ is lighter than air and will disperse rapidly in an open environment, but may pool at the roof peak in unventilated areas. Burned MagneGas™ has a high percentage of Oxygen. Stop gas flow and fight fire conventionally. Use water spray to keep cylinder and or other containers cool if exposed to fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS: MagneGas™ is flammable and explosive in certain concentrations. Ignition limits are narrower than other combustible gases but are not fully known in all circumstances.

HAZARDOUS DECOMPOSITION PRODUCTS:

SECTION 5 NOTES: None

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: MagneGas™ is lighter than air and will disperse rapidly in an open environment, but may pool at the roof peak in unventilated areas. Shut off gas flow and ventilate area using explosion-proof equipment and methods.

SECTION 6 NOTES: None

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: Store in dry, well ventilated areas. Keep away from open flames and high temperatures.

OTHER PRECAUTIONS: Use explosion-proof ventilation to prevent vapor accumulation. Ground equipment to prevent sparking.

SECTION 7 NOTES: Keep containers closed when not in use. Containers even those that have been emptied, can contain explosive vapors. (Do not cut, drill, grind, weld or perform similar operations around or near cylinders or containers.)

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use adequate natural or mechanical ventilation to prevent accumulation of vapors.

VENTILATION : An explosion-proof local exhaust system is acceptable.

RESPIRATORY PROTECTION: None required under normal use. An air-supplied respirator must be used in confined spaces. Respiratory protection must conform to OSHA rules as specified in 29 CFR 1910.134. Select per OSHA 29 CFR 1910.134 and ANSI Z88.2. Oxygen-deficient atmospheres are in the flammable range. Do Not Enter.

EYE PROTECTION: Safety glasses are recommended for handling cylinders. Welders' goggles or similar equipment are required for cutting and welding operations. Select in accordance with OSHA 29 CFR 1910.133.

SKIN PROTECTION: Ordinary leatherwork gloves are recommended for handling cylinders. Welders' gloves are required for cutting and welding operations.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Leather sleeves, leather apron, and other standard protective equipment are required for cutting and welding. Metatarsal shoes for cylinder handling. Select in accordance with OSHA 29 CFR 1910.132 and 1910.133.

WORK HYGIENIC PRACTICES: Regardless of protective equipment, never touch live electrical parts.

SECTION 8 NOTES: Mechanical ventilation for enclosed storage areas must meet National Electrical Code requirements for Class 1, Group B.



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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Clear gas
ODOR:	Distinct Hydrocarbon odor
PHYSICAL STATE:	Gas
pH AS SUPPLIED:	NA
pH (Other):	NA
BOILING POINT:	ND (Compressed gas mixture)
F:	
C:	
MELTING POINT:	ND (Compressed gas mixture)
F:	
C:	
FREEZING POINT:	ND (Compressed gas mixture)
F:	
C:	
VAPOR PRESSURE (mmHg):	ND (Compressed gas mixture)
@	
F:	
C:	
VAPOR DENSITY (AIR = 1):	ND (Compressed gas mixture)
@	
F:	
C:	
DENSITY:	0.0259 lb/ft ³
SPECIFIC GRAVITY (H ₂ O = 1):	0.3387 (Compared to dry normal air)
EVAPORATION RATE:	NA (Compressed gas mixture)
	BASIS (=1):
SOLUBILITY IN WATER:	NA
PERCENT SOLIDS BY WEIGHT:	NA
PERCENT VOLATILE:	100% (Compressed gas mixture), Refer to Section 2 for typical composition
VOLATILE ORGANIC COMPOUNDS (VOC):	NA, Refer to Section 2 for typical composition
MOLECULAR WEIGHT:	9.81
VISCOSITY:	NA (Compressed gas mixture)
SECTION 9 NOTES:	Refer to attached laboratory analysis

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable



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CONDITIONS TO AVOID (STABILITY): Storage in excess of 2,500 scf should be outdoors or in well-ventilated area, refer to Section 8.

INCOMPATIBILITY (MATERIAL TO AVOID):

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: None under normal combustion conditions
HAZARDOUS POLYMERIZATION: Should not occur

CONDITIONS TO AVOID (POLYMERIZATION): None known

SECTION 10 NOTES: None

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: Hydrogen is considered a simple asphyxiant

SECTION 11 NOTES: None

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: No adverse ecological effects expected. MagneGas™ does not contain any Class I or Class II ozone depleting chemicals. MagneGas™ is not listed as a marine pollutant by DOT.

SECTION 12 NOTES: None

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Do not attempt to dispose of residual or unused quantities. Return cylinder to supplier.

RCRA HAZARD CLASS: NA

SECTION 13 NOTES: None

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION

PROPER SHIPPING NAME: Compressed Gas Flammable, N.O.S., (contains MagneGas 55 – 65% Hydrogen)
HAZARD CLASS: 2.1
ID NUMBER: UN1954
PACKING GROUP: Refer to 49CFR Parts 173.302 and 173.305
LABEL STATEMENT: Flammable Gas

SECTION 14 NOTES: Cylinders should be transported in a secure position, in a well-ventilated vehicle. Cylinders transported in an enclosed, non-ventilated compartment of a vehicle can present serious safety hazards.

Shipment of compressed gas cylinders that have been filled without the owner's consent is a violation of federal law [49 CFR 173.301(b)].

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT): NA



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CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): NA

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):

SECTIONS 311/312: Require submission of MSDSs and reporting of chemical inventories with identification of EPA hazard categories. The hazard categories for this product are as follows:

IMMEDIATE: No PRESSURE: Yes DELAYED: No REACTIVITY: No FIRE: Yes

313 REPORTABLE INGREDIENTS: Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR Part 372, not listed.

STATE REGULATIONS:

CALIFORNIA: Hydrogen is not listed by California under the SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (Proposition 65).

PENNSYLVANIA: Hydrogen is subject to the PENNSYLVANIA WORKER AND COMMUNITY RIGHT-TO-KNOW ACT (35 P.S. Sections 7301-7320).

INTERNATIONAL REGULATIONS: None

SECTION 15 NOTES: None

SECTION 16: OTHER INFORMATION

N D = Not Determined

NA = Not Applicable

OTHER INFORMATION: MagneGas™ shipments must be accordance with department of Transportation (DOT) regulations using the DOT label "FLAMMABLE GAS". Consult DOT regulations for details on the shipping of hazardous materials.

Use only in well ventilated areas. Always keep cylinders upright and secure. Never expose cylinders to heat. Always open close valves slowly. Return cylinders to manufacturer with positive pressure and with valves closed. Avoid dragging, rolling or sliding cylinders, even for a short distance. Use a suitable hand truck or lifting apparatus. For additional handling recommendations on compressed gas cylinders consult compressed gas association pamphlet p-1.

Storage in excess of 2,500 scf should be outdoors or in well-ventilated special rooms or buildings. Keep cylinders away from sources of heat. Storage should not be heavy traffic areas to prevent accidental knocking over damage from passing or falling objects. Valve caps should remain in cylinders not connected for use. Segregate full and empty cylinders. Keep MagneGas™ cylinders storage areas away from storage of oxygen and other oxidizers. Storage areas should be free from combustible materials. See compressed Gas Association Pamphlet P-1 and National Fire Protection Association Standard No. 51 for additional storage recommendations.

Be sure to read and understand all labels and instructions supplied with all containers of this product.

OTHER HAZARDOUS CONDITIONS OF HANDLING, STORAGE, AND USE: *Flammable high-pressure gas. Use only in a closed system.* Use piping and equipment adequately designed to withstand pressures and temperatures to be encountered. Use only spark-proof tools and explosion-proof equipment. Keep away from heat, sparks, and open flame. *Gas can cause rapid suffocation due to oxygen deficiency.* Store and use with adequate ventilation. Close cylinder valve after each use; keep closed even when empty. *Never work on a pressurized system.* If there is a leak, close the cylinder valve.

Blow the system down in a safe and environmentally sound manner in compliance with all federal, state, and local laws; then repair the leak. *Never place a compressed gas cylinder where it may become part of an electrical circuit.*

MIXTURES: When you mix two or more gases or liquefied gases, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product.

Remember, gases and liquids have properties that can cause serious injury or death.



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MagneGas Corporation requests users of this product to study this MSDS and become aware of our products potential hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this MSDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

PREPARATION INFORMATION: Prepared for MagneGas under agreement by Safety Partners LLC, Sarasota, FL.

DISCLAIMER:

READ AND UNDERSTAND MATERIAL SAFETY DATA SHEET BEFORE HANDING OR DISPOSING OF THIS PRODUCT. THIS MATERIAL SAFETY DATA SHEET (MSDS) COMPLIES WITH THE REQUIRMENTS OF OSHA HAZARD COMMUNICATION STATNDARD (29 CFD 1910.1200) FOR USE IN THE WORKPLACE. THIS LABEL IS NOT INTENDED TO BE USED WITH PACKAGING INTENDED FOR SALE TO CONSUMERS AND MAY NOT CONFORM TO THE REQUIRMENTS OF THE CONSUMER PRODUCT SAFETY ACT OF OTHER RELATED REGULATORY REQUIRMENTS.

THE INFORMATION CONTAINED IN THIS DATA SHEET IS BASED ON THE DATA AVALIBLE TO US AT THIS TIME, AND IS BELIEVED TO BE ACCURATE BASED UPON THAT DATA. IT IS PROVIDED INDEPENDENTLY OF THE SALE OF ANY PRODUCT, FOR THE PURPOSE OF HAZARD COMMUNIVATION. IT IS NOT INTENDED TO CONSTITUTE PRODUCT PERFORMANCE INFORMATION AND NO EXPRESS OR IMPLIED WARRANTY OF ANY KIND IS MADE WITH RESPECT TO THE PRODUCT, UNDERLYING DATA OR THE INFORMATION CONTAINED HEREIN. YOU ARE ENCOURAGED TO OBTAIN DATA SHEETS FOR ALL

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TO DETERMINE THE APPLICABILTIY OR EFFECT OF ANY LAW OR REGULATION WITH RESPECT TO THE PRODUCT, YOU SHOULD CONSULT WITH YOUR LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENT AGENCY. WE WILL NOT PROVIDE

ADVICE ON SUCH MATTERS, OR BE RESPONSIBLE FOR ANY INJURY FROM THE USE OT HE PRODUCT DESCRIBED HEREIN. THE UNDERLYING DATA, AND THE INFORMATION PROVIDED HEREIN AS A RESULT OF THAT DATA IS THE PROPERTY OF MAGNEGAS CORPORATION EXPRESS WRITTEN CONSENT OF MAGNEGAS CORPORATION INC.



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Atlantic Analytical Laboratory
Gas Analysis Report

MagneGas Corporation
 150 Rainville Road
 Tarpon Springs, FL 34689
 (727) 934-3448
 Attn: Ruggero Santilli; E-mail: IBR@gte.net

AAL Number: 16054
 Received On: 14 Sept 10
 Report Date: 20 Sept 10
 PO Number: verbal

Sample ID.: Dried gas
 Sample ID.: 1 sample received in a 500 cc AAL Cyl # 0515.

Sampled On: 10 Sept 10
 Location: --

Composition (Normalized, % v/v, by ASTM D 1946-90)

Non-Hydrocarbon Gases

	<u>Result</u>	<u>D.L.</u>
Nitrogen: -----	0.67	0.01
Oxygen: -----	0.22	0.01
Argon: -----	nd	0.01
Carbon Dioxide: -----	0.17	0.01
Carbon Monoxide: -----	28.0	0.01
Hydrogen: -----	69.5	0.05
Water Vapor: -----	0.00013	0.0001

Hydrocarbons

	<u>Result</u>	<u>D.L.</u>
Methane: -----	1.446	0.001
Ethylene: -----	0.032	0.001
Ethane: -----	0.006	0.001
Propylene: -----	nd	0.001
Propane: -----	nd	0.001
Isobutane: -----	nd	0.001
n-Butane: -----	nd	0.001
Butenes: -----	nd	0.001
Isopentane: -----	nd	0.001
n-Pentane: -----	nd	0.001
Pentenes: -----	nd	0.001
Hexanes +: -----	nd	0.001

D.L. = instrumental detection limit for the reported analyte. **nd** = indicates the concentration is less than the accompanying report detection limit. **--** = test not performed. **%** = parts per hundred (percent). **ppm** = parts per million. **w/w** = weight analyte/weight sample format. **v/v** = volume analyte/volume sample format (equivalent to mole fraction for normalized, ideal gas mixtures). Conversions: 0.0001% = 1 ppm.

Comments:



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