

# Safety Data Sheet

Document #: G-137



Division of Fresno Oxygen

## Barnes Welding Supply/Barnes Specialty Gases

### Division of Fresno Oxygen

2825 S. Elm Ave. #101  
Fresno, California 93706  
Toll Free: (800) 404-9353  
Fax: (559) 233-4206  
http://www.barnesweldingsupply.com  
E-mail: info@barneswelding.com

Emergency Phone:  
International

Infotrac 1(800) 535-5053  
Infotrac 1(352) 323-3500

## Section 1: Product and Company Identification

Barnes Welding Supply / Barnes Specialty Gases - Division of Fresno Oxygen

2825 S. Elm Ave. #101  
Fresno, CA 93706  
(800) 404-9353 Toll Free  
(559) 233-4206 Fax  
http://barnesweldingsupply.com  
info@barneswelding.com  
FOR CHEMICAL EMERGENCIES DURING TRANSPORTATION ONLY CALL INFOTRAC 1-800-535-5053

Product Name: **J-Type Mixes**  
Part Number: J1 253

## Section 2: Hazards Identification



Warning

**Hazard Classification:**  
Gases Under Pressure

**Hazard Statements:**  
Contains gas under pressure; may explode if heated

### Precautionary Statements

**Storage:**  
Protect from sunlight.  
Store in well-ventilated place.

## Section 3: Composition/Information on Ingredients

|          | CAS #     | Concentration |
|----------|-----------|---------------|
| Nitrogen | 7727-37-9 | 95%           |
| Hydrogen | 1333-74-0 | 5%            |

|          | Chemical Substance       | Chemical Family | Trade Names                                                                     |
|----------|--------------------------|-----------------|---------------------------------------------------------------------------------|
| Nitrogen | NITROGEN, COMPRESSED GAS | inorganic, gas  | DIATOMIC NITROGEN; DINITROGEN; NITROGEN; NITROGEN-14; NITROGEN GAS; UN 1066; N2 |
| Hydrogen | HYDROGEN                 | inorganic, gas  | HYDROGEN GAS; HYDROGEN COMPRESSED; HYDROGEN (H2); DIHYDROGEN; UN 1049; H2       |

## Section 4: First Aid Measures

|          | Skin Contact                           | Eye Contact                      | Ingestion                                              | Inhalation                                                                                                                                                                                                               | Note to Physicians               |
|----------|----------------------------------------|----------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Nitrogen | Wash exposed skin with soap and water. | Flush eyes with plenty of water. | If a large amount is swallowed, get medical attention. | If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention. | For inhalation, consider oxygen. |
| Hydrogen | Wash exposed skin with soap and water. | Flush eyes with plenty of water. | If a large amount is swallowed, get medical attention. | If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention. | For inhalation, consider oxygen. |

## Section 5: Fire Fighting Measures

|          | Suitable Extinguishing Media                                                                                               | Products of Combustion | Protection of Firefighters                                                                                                     |
|----------|----------------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Nitrogen | Non-flammable. Use suitable extinguishing media for surrounding fire. Cylinders may rupture or explode if exposed to heat. | Non-flammable          | Respiratory protection may be needed for frequent or heavy exposure.                                                           |
| Hydrogen | Carbon dioxide, regular dry chemical. Large fires: Flood with fine water spray.                                            | None known             | Any self-contained breathing apparatus with a full facepiece.<br>Any self-contained breathing apparatus with a full facepiece. |

## Section 6: Accidental Release Measures

|          | Personal Precautions                                                                                                                      | Environmental Precautions                                 | Methods for Containment                                     |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------|
| Nitrogen | Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.                                  | No significant effects from contamination expected.       | Stop leak if possible without personal risk.                |
| Hydrogen | Keep unnecessary people away, isolate hazard area and deny entry. Do not touch spilled material. Ventilate closed spaces before entering. | Avoid heat, flames, sparks and other sources of ignition. | Reduce vapors with water spray. Remove sources of ignition. |

|          | Methods for Cleanup                          | Other Information |
|----------|----------------------------------------------|-------------------|
| Nitrogen | N/A                                          | N/A               |
| Hydrogen | Stop leak if possible without personal risk. | None              |

## Section 7: Handling and Storage

|          | Handling                                                                                                                                                              | Storage                                      |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Nitrogen | Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.                                 | Keep separated from incompatible substances. |
| Hydrogen | Store and handle in accordance with all current regulations and standards. Grounding and bonding required. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. | Keep separated from incompatible substances. |

## Section 8: Exposure Controls/Personal Protection

|          | Exposure Guidelines                                           |
|----------|---------------------------------------------------------------|
| Nitrogen | NITROGEN, COMPRESSED GAS. NITROGEN: ACGIH (simple asphyxiant) |
| Hydrogen | HYDROGEN: ACGIH (simple asphyxiant)                           |

### Engineering Controls

Handle only in fully enclosed systems.

|          | Eye Protection                                | Skin Protection                      | Respiratory Protection                                               |
|----------|-----------------------------------------------|--------------------------------------|----------------------------------------------------------------------|
| Nitrogen | Eye protection not required, but recommended. | Protective clothing is not required. | Respiratory protection may be needed for frequent or heavy exposure. |
| Hydrogen | Eye protection not required, but recommended. | Protective clothing is not required. | Any self-contained breathing apparatus with a full facepiece.        |

### General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

## Section 9: Physical and Chemical Properties

|          | Physical State | Appearance | Color     | Change in Appearance | Physical Form | Odor     | Taste     |
|----------|----------------|------------|-----------|----------------------|---------------|----------|-----------|
| Nitrogen | Gas            | Clear      | Colorless | N/A                  | Gas           | Odorless | Tasteless |
| Hydrogen | Gas            | Colorless  | Colorless | N/A                  | Gas           | Odorless | Tasteless |

|          | Flash Point                                       | Flammability  | Partition Coefficient | Autoignition Temperature | Upper Explosive Limits | Lower Explosive Limits |
|----------|---------------------------------------------------|---------------|-----------------------|--------------------------|------------------------|------------------------|
| Nitrogen | Not flammable                                     | Not available | Not available         | Nonflammable             | Nonflammable           | Nonflammable           |
| Hydrogen | Flammable gas (burns at all ambient temperatures) | Not available | Not available         | 752 F (400 C)            | 0.75                   | 0.04                   |

|          | Boiling Point   | Freezing Point  | Vapor Pressure    | Vapor Density | Specific Gravity | Water Solubility | pH             | Odor Threshold | Evaporation Rate | Viscosity            |
|----------|-----------------|-----------------|-------------------|---------------|------------------|------------------|----------------|----------------|------------------|----------------------|
| Nitrogen | -321 F (-196 C) | -346 F (-210 C) | 760 mmHg @ -196 C | 0.967 (Air=1) | Not applicable   | 1.6% @ 20 C      | Not applicable | Not available  | Not applicable   | 0.01787 cP @ 27 C    |
| Hydrogen | -423 F (-253 C) | -434 F (-259 C) | 760 mmHg @ -253 C | 0.07 (Air=1)  | Not applicable   | 1.82% @ 20 C     | Not applicable | Not available  | Not applicable   | 0.008957 cP @ 26.8 C |

|          | Molecular Weight | Molecular Formula | Density           | Weight per Gallon | Volatility by Volume | Volatility     | Solvent Solubility      |
|----------|------------------|-------------------|-------------------|-------------------|----------------------|----------------|-------------------------|
| Nitrogen | 28.0134          | N2                | 1.2506 g/L        | Not available     | 100%                 | 1              | Soluble: Liquid ammonia |
| Hydrogen | 2                | H2                | 0.08987 g/L @ 0 C | Not available     | Not available        | Not applicable | Soluble: Not available  |

## Section 10: Stability and Reactivity

|          | Stability                                   | Conditions to Avoid                         | Incompatible Materials                                                                                                                                                                             |
|----------|---------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nitrogen | Stable at normal temperatures and pressure. | Stable at normal temperatures and pressure. | Metals, oxidizing materials                                                                                                                                                                        |
| Hydrogen | Stable at normal temperatures and pressure. | Stable at normal temperatures and pressure. | Metals, oxidizing materials, metal oxides, combustible materials, halogens, metal salts, halo carbons, nitrogen trifluoride, oxygen difluoride, magnesium and calcium carbonate, sodium, potassium |

|          | Hazardous Decomposition Products     | Possibility of Hazardous Reactions |
|----------|--------------------------------------|------------------------------------|
| Nitrogen | Oxides of nitrogen                   | Will not polymerize.               |
| Hydrogen | Miscellaneous decomposition products | Will not polymerize.               |

## Section 11: Toxicology Information

### Acute Effects

|          | Oral LD50     | Dermal LD50   | Inhalation                                                                                                                           |
|----------|---------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Nitrogen | Not available | Not available | Nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, tingling sensation, loss of coordination, convulsions, coma |
| Hydrogen | Not           | Not           | Nausea, vomiting, difficulty breathing, irregular heartbeat, headache, fatigue, dizziness, disorientation, mood swings, tingling     |

|  |                  |                    |                                                                     |
|--|------------------|--------------------|---------------------------------------------------------------------|
|  | <b>Oral LD50</b> | <b>Dermal LD50</b> | <b>Inhalation</b>                                                   |
|  | available        | available          | sensation, loss of coordination, convulsions, unconsciousness, coma |

  

|                 |                                                                 |                                               |                      |
|-----------------|-----------------------------------------------------------------|-----------------------------------------------|----------------------|
|                 | <b>Eye Irritation</b>                                           | <b>Skin Irritation</b>                        | <b>Sensitization</b> |
| <b>Nitrogen</b> | Contact with rapidly expanding gas may cause burns or frostbite | No information on significant adverse effects | Difficulty breathing |
| <b>Hydrogen</b> | Not irritating                                                  | Not irritating                                | Difficulty breathing |

#### Chronic Effects

|                 |                        |                     |                             |                              |
|-----------------|------------------------|---------------------|-----------------------------|------------------------------|
|                 | <b>Carcinogenicity</b> | <b>Mutagenicity</b> | <b>Reproductive Effects</b> | <b>Developmental Effects</b> |
| <b>Nitrogen</b> | Not hazardous          | Not available       | Not available               | No data                      |
| <b>Hydrogen</b> | Not available          | Not available       | Not available               | No data                      |

## Section 12: Ecological Information

#### Fate and Transport

|                 |                                                                                                                                                                         |                                    |                                       |                                |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------------|--------------------------------|
|                 | <b>Eco toxicity</b>                                                                                                                                                     | <b>Persistence / Degradability</b> | <b>Bioaccumulation / Accumulation</b> | <b>Mobility in Environment</b> |
| <b>Nitrogen</b> | Fish toxicity: Not available<br>Invertebrate toxicity: Not available<br>Algal toxicity: Not available<br>Phyto toxicity: Not available<br>Other toxicity: Not available | Not available                      | Not available                         | Not available                  |
| <b>Hydrogen</b> | Fish toxicity: Not available<br>Invertebrate toxicity: Not available<br>Algal toxicity: Not available<br>Phyto toxicity: Not available<br>Other toxicity: Not available | Not available                      | Not available                         | Not available                  |

## Section 13: Disposal Considerations

|                 |                                                                                                                                               |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Nitrogen</b> | Dispose in accordance with all applicable regulations.                                                                                        |
| <b>Hydrogen</b> | Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001. |

## Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

#### DOT Information For This Mixture

|                           |                                             |
|---------------------------|---------------------------------------------|
| <b>Shipping Name</b>      | Compressed gas, n.o.s. (Nitrogen, Hydrogen) |
| <b>UN Number</b>          | UN1956                                      |
| <b>Hazard Class</b>       | 2.2                                         |
| <b>Hazard Information</b> | Non-Flammable Gas                           |

#### Individual Component Information

|                 |                             |                  |                                 |                      |                              |                                                           |                                                 |                                        |
|-----------------|-----------------------------|------------------|---------------------------------|----------------------|------------------------------|-----------------------------------------------------------|-------------------------------------------------|----------------------------------------|
|                 | <b>Proper Shipping Name</b> | <b>ID Number</b> | <b>Hazard Class or Division</b> | <b>Packing Group</b> | <b>Labeling Requirements</b> | <b>Passenger Aircraft or Railcar Quantity Limitations</b> | <b>Cargo Aircraft Only Quantity Limitations</b> | <b>Additional Shipping Description</b> |
| <b>Nitrogen</b> | Nitrogen, compressed        | UN1066           | 2.2                             | Not applicable       | 2.2                          | 75 kg or L                                                | 150 kg                                          | N/A                                    |
| <b>Hydrogen</b> | Hydrogen, compressed        | UN1049           | 2.1                             | Not applicable       | 2.1                          | Forbidden                                                 | 150 kg                                          | None                                   |

#### Canadian Transportation of Dangerous Goods

|                 |                      |                  |              |                                   |
|-----------------|----------------------|------------------|--------------|-----------------------------------|
|                 | <b>Shipping Name</b> | <b>UN Number</b> | <b>Class</b> | <b>Packing Group / Risk Group</b> |
| <b>Nitrogen</b> | Nitrogen, compressed | UN1066           | 2.2          | Not applicable                    |
| <b>Hydrogen</b> | Hydrogen, compressed | UN1049           | 2.1          | Not applicable                    |

## Section 15: Regulatory Information

#### U.S. Regulations

|                 |                        |                    |                    |
|-----------------|------------------------|--------------------|--------------------|
|                 | <b>CERCLA Sections</b> | <b>SARA 355.30</b> | <b>SARA 355.40</b> |
| <b>Nitrogen</b> | Not regulated.         | Not regulated.     | Not regulated.     |
| <b>Hydrogen</b> | Not regulated.         | Not regulated.     | Not regulated.     |

#### SARA 370.21

|                 |              |                |             |                 |                       |
|-----------------|--------------|----------------|-------------|-----------------|-----------------------|
|                 | <b>Acute</b> | <b>Chronic</b> | <b>Fire</b> | <b>Reactive</b> | <b>Sudden Release</b> |
| <b>Nitrogen</b> | Yes          | No             | No          | No              | Yes                   |
| <b>Hydrogen</b> | Yes          | No             | Yes         | No              | Yes                   |

#### SARA 372.65

|                 |                |
|-----------------|----------------|
| <b>Nitrogen</b> | Not regulated. |
| <b>Hydrogen</b> | Not regulated. |

#### OSHA Process Safety

|                 |                |
|-----------------|----------------|
| <b>Nitrogen</b> | Not regulated. |
| <b>Hydrogen</b> | Not regulated. |

#### State Regulations

|                 |                          |
|-----------------|--------------------------|
|                 | <b>CA Proposition 65</b> |
| <b>Nitrogen</b> | Not regulated.           |
| <b>Hydrogen</b> | Not regulated.           |

#### Canadian Regulations

|                 |                             |
|-----------------|-----------------------------|
|                 | <b>WHMIS Classification</b> |
| <b>Nitrogen</b> | A                           |
| <b>Hydrogen</b> | A, B1.                      |

#### National Inventory Status

|                 |                            |                                     |                                    |
|-----------------|----------------------------|-------------------------------------|------------------------------------|
|                 | <b>US Inventory (TSCA)</b> | <b>TSCA 12b Export Notification</b> | <b>Canada Inventory (DSL/NDSL)</b> |
| <b>Nitrogen</b> | Listed on inventory.       | Not listed.                         | Listed on inventory.               |
| <b>Hydrogen</b> | Listed on inventory.       | Not listed.                         | Listed on inventory.               |

## Section 16: Other Information

|                 |                              |
|-----------------|------------------------------|
|                 | <b>NFPA Rating</b>           |
| <b>Nitrogen</b> | HEALTH=1 FIRE=0 REACTIVITY=0 |
| <b>Hydrogen</b> | HEALTH=0 FIRE=4 REACTIVITY=0 |

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard