Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
NITROGEN, COMPRESSED GAS

Synonyms
MTG SDS 67; DIATOMIC NITROGEN; DINITROGEN; NITROGEN-14; NITROGEN GAS; UN 1066; N2

Chemical Family
inorganic, Gas

Product Description
Classification determined in accordance with Compressed Gas Association standards.

Product Use
Industrial and Specialty Gas Applications.

Restrictions on Use
None known.

Details of the supplier of the safety data sheet
MATHESON TRI-GAS, INC.
909 Lake Carolyn Parkway
Suite 1300
Irving, TX 75039
General Information: 1-800-416-2505
Emergency #: 1-800-424-9300 (CHEMTREC)
Outside the US: 703-527-3887 (Call collect)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Gases Under Pressure - Compressed gas
Simple Asphyxiant

GHS Label Elements
Symbol(s)

Signal Word
Warning

Hazard Statement(s)
Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary Statement(s)
Prevention
None needed according to classification criteria.

Response
None needed according to classification criteria.

Storage
Protect from sunlight.
Store in a well-ventilated place.
Safety Data Sheet

Material Name: NITROGEN, COMPRESSED GAS

Disposal
Dispose in accordance with all applicable regulations.

Other Hazards
Rapid release of compressed gas may cause frostbite.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS</th>
<th>Component Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>7727-37-9</td>
<td>Nitrogen, compressed</td>
<td>100</td>
</tr>
</tbody>
</table>

Section 4 - FIRST AID MEASURES

Inhalation
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.

Skin
If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115°F; 41-46°C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

Eyes
Flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Then get immediate medical attention.

Ingestion
If swallowed, get medical attention.

Most Important Symptoms/Effects
Acute
suffocation, frostbite

Delayed
no information on significant adverse effects.

Note to Physicians
For inhalation, consider oxygen.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media
Suitable Extinguishing Media
Use extinguishing agents appropriate for surrounding fire.

Unsuitable Extinguishing Media
None known.

Special Hazards Arising from the Chemical
Negligible fire hazard. Pressurized containers may rupture or explode if exposed to sufficient heat.

Hazardous Combustion Products
oxides of nitrogen

Fire Fighting Measures
Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Do not direct water at source of leak or safety devices; icing may occur. Stay away from the ends of tanks. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Use extinguishing agents appropriate for surrounding fire. Apply water from a protected location or from a safe distance. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Reduce vapors with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Consider downwind evacuation if material is leaking.
Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures
Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up
Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Do not touch or walk through spilled material. If possible, turn leaking containers so that gas escapes rather than liquid. Do not direct water at spill or source of leak. Allow substance to evaporate. Ventilate closed spaces before entering.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling
Avoid breathing dust/fume/gas/mist/vapors/spray. Use only with adequate ventilation. Wash hands thoroughly after handling.

Conditions for Safe Storage, Including any Incompatibilities
Protect from sunlight.
Store in a well-ventilated place.

Incompatible Materials
metals, oxidizing materials

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

<table>
<thead>
<tr>
<th>Component</th>
<th>Threshold Limit Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen, compressed</td>
<td>7727-37-9</td>
</tr>
</tbody>
</table>

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)
There are no biological limit values for any of this product's components.

Engineering Controls
Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection
For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety glasses.

Skin Protection
For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

Respiratory Protection
Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use. Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Glove Recommendations
For the gas: Protective gloves are not required. For the liquid: Wear insulated gloves.
Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>colorless gas</td>
</tr>
<tr>
<td>Odor</td>
<td>odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point</td>
<td>-210 °C (-346 °F)</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>-196 °C (-321 °F)</td>
</tr>
<tr>
<td>Boiling Point Range</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower Explosive Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Upper Explosive Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Density (air=1)</td>
<td>0.967</td>
</tr>
<tr>
<td>Specific Gravity (water=1)</td>
<td>Not available</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>1.6 % (@ 20 °C)</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>0.01787 cp</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility (Other)</td>
<td>Not available</td>
</tr>
<tr>
<td>Log KOW</td>
<td>0.67</td>
</tr>
<tr>
<td>Physical Form</td>
<td>compressed gas</td>
</tr>
<tr>
<td>Taste</td>
<td>tasteless</td>
</tr>
<tr>
<td>Volatility</td>
<td>100 %</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>N2</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>28.0134</td>
</tr>
<tr>
<td>Critical Temperature</td>
<td>-147.1 °C</td>
</tr>
</tbody>
</table>

Solvent Solubility
Soluble
- liquid ammonia
Slightly Soluble
- alcohol

Section 10 - STABILITY AND REACTIVITY

Reactivity
No reactivity hazard is expected.

Chemical Stability
Stable at normal temperatures and pressure.

Possibility of Hazardous Reactions
Will not polymerize.

Conditions to Avoid
Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.
Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

**Inhalation**
nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, tingling sensation, loss of coordination, convulsions, coma

**Skin Contact**
frostbite

**Eye Contact**
irritation, frostbite

**Ingestion**

Ingestion of a gas is unlikely

**Acute and Chronic Toxicity**

**Component Analysis - LD50/LC50**
The components of this material have been reviewed in various sources and no selected endpoints have been identified.

**Product Toxicity Data**

**Acute Toxicity Estimate**
No data available.

**Immediate Effects**
suffocation, frostbite

**Delayed Effects**
no information on significant adverse effects.

**Irritation/Corrosivity Data**
No animal testing data available for skin or eyes.

**Respiratory Sensitization**
No data available.

**Dermal Sensitization**
No data available.

**Component Carcinogenicity**
None of this product’s components are listed by ACGIH, IARC, NTP, DFG or OSHA.

**Germ Cell Mutagenicity**
No data available.

**Tumorigenic Data**
No data available

**Reproductive Toxicity**
No data available.

**Specific Target Organ Toxicity - Single Exposure**
No target organs identified.

**Specific Target Organ Toxicity - Repeated Exposure**
No target organs identified.

**Aspiration hazard**
Not applicable.

**Medical Conditions Aggravated by Exposure**
None known.
Section 12 - ECOLOGICAL INFORMATION

**Component Analysis - Aquatic Toxicity**
No LOLI ecotoxicity data are available for this product's components.

**Persistence and Degradability**
No data available.

**Bioaccumulative Potential**
No data available.

**Mobility**
No data available.

Section 13 - DISPOSAL CONSIDERATIONS

**Disposal Methods**
Dispose in accordance with all applicable regulations.

**Component Waste Numbers**
The U.S. EPA has not published waste numbers for this product's components.

Section 14 - TRANSPORT INFORMATION

**US DOT Information:**
Shipping Name: NITROGEN, COMPRESSED
Hazard Class: 2.2
UN/NA #: UN1066
Required Label(s): 2.2

**IMDG Information:**
Shipping Name: NITROGEN, COMPRESSED
Hazard Class: 2.2
UN#: UN1066
Required Label(s): 2.2

**International Bulk Chemical Code**
This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Section 15 - REGULATORY INFORMATION

**U.S. Federal Regulations**
None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

**SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories**
Gas Under Pressure; Simple Asphyxiant

**U.S. State Regulations**
The following components appear on one or more of the following state hazardous substances lists:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen, compressed</td>
<td>7727-37-9</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)**
Not listed under California Proposition 65.

**Component Analysis - Inventory**
Nitrogen, compressed (7727-37-9)
Safety Data Sheet

Material Name: NITROGEN, COMPRESSED GAS

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>DSL</td>
<td>Yes</td>
<td>Yes</td>
<td>EIN</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KR - REACH CCA</th>
<th>MX</th>
<th>NZ</th>
<th>PH</th>
<th>TH-TECI</th>
<th>TW, CN</th>
<th>VN (Draft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Section 16 - OTHER INFORMATION

NFPA Ratings
Health: 0 Fire: 0 Instability: 0 Other: SA
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes
Updated: 03/01/2017

Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC – European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kov - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; KR REACH CCA - Korea Registration and Evaluation of Chemical Substances Chemical Control Act; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX – Mexico; Nq - Non-quantitative; NSL – Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL - Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH - Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA – Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TH-TECI - Thailand - FDA Existing Chemicals Inventory (TECI); TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW – Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

Other Information
Safety Data Sheet

Material Name: NITROGEN, COMPRESSED GAS

SDS ID: MAT16625

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