Safety Data Sheet

Material Name: NITROGEN, COMPRESSED GAS

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
NITROGEN, COMPRESSED GAS

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

Chemical Family
inorganic, Gas

Product Use
Industrial and Specialty Gas Applications.

Restrictions on Use
None known.

Details of the supplier of the safety data sheet
MATHESON GAS PRODUCT KOREA
91-1 Samgeo-ri; Umbong-myun
Asan City, Korea
Phone: 041-539-7400 (day)
Emergency Phone #: 041-539-7488 (night/weekend/holiday)
Department in charge: SHE

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.

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.
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Other Hazards
The 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 GAS</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. Get immediate medical attention.

**Ingestion**
If swallowed, get medical attention.

**Most Important Symptoms/Effects**

- **Acute**
  - suffocation, frostbite

- **Delayed**
  - No data available.

**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.

**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. Stay away from the ends of tanks. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile).

Use extinguishing agents appropriate for surrounding fire. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Do not get water directly on material. 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.

**Special Protective Equipment and Precautions for Firefighters**
Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.
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. Ventilate closed spaces before entering. Damaged cylinders should be handled only by specialists. Do not touch or walk through spilled material. If possible, turn leaking containers so that gas escapes rather than liquid.

Environmental Precautions
Avoid release to the environment.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling
Avoid breathing dust/fume/gas/mist/vapors/spray. Use only with adequate ventilation.

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>NITROGEN, COMPRESSED GAS</th>
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</tr>
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</table>

ACGIH: (See Appendix F: Minimal Oxygen Content)

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. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

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

Respiratory Protection
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 appropriate protective, cold insulating clothing.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Physical State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available</td>
<td>gas</td>
</tr>
</tbody>
</table>
Odor: odorless
Odor Threshold: Not available

Color: colorless
pH: Not available

Melting Point: -210 °C (-346 °F)
Boiling Point: -196 °C (-321 °F)

Boiling Point Range: Not available
Flammability (solid, gas): Not available

Autoignition Temperature: Not available
Flash Point: Not available

Lower Explosive Limit: Not available
Decomposition temperature: Not available

Upper Explosive Limit: Not available
Vapor Pressure: 760 mmHg @ -196 °C

Vapor Density (air=1): 0.967
Specific Gravity (water=1): 0.967

Water Solubility: 1.6 % (@ 20 °C)
Partition coefficient: n-octanol/water: Not available

Viscosity: 0.01787 cp
Kinematic viscosity: Not available

Solubility (Other): Not available
Density: 1.2506 g/L

Log KOW: 0.67
Physical Form: gas

Taste: tasteless
Volatility: 100 %

Molecular Formula: N2
Molecular Weight: 28.0134

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.

Incompatible Materials
metals, oxidizing materials

Hazardous decomposition products
oxides of nitrogen
Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation
nausea, vomiting, tingling sensation, suffocation, convulsions, coma, headache, drowsiness, dizziness, loss of coordination, Unconsciousness, fatigue, impairment of judgement, irregular heartbeat

Skin Contact
blisters, frostbite

Eye Contact
frostbite, blurred vision

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 data available.

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
Simple Asphyxiant

Specific Target Organ Toxicity - Repeated Exposure
No data available.

Aspiration hazard
Not applicable.

Medical Conditions Aggravated by Exposure
None known.

Section 12 - ECOLOGICAL INFORMATION

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

Persistence and Degradability
Safety Data Sheet

Material Name: NITROGEN, COMPRESSED GAS

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

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>
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<tr>
<td>NITROGEN, COMPRESSED GAS</td>
<td>7727-37-9</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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</table>

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

Canada Regulations
Canadian WHMIS Ingredient Disclosure List (IDL)
The components of this product are either not listed on the IDL or are present below the threshold limit listed on the IDL.

WHMIS Classification
A

Component Analysis - Inventory
NITROGEN, COMPRESSED GAS (7727-37-9)
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Sds id: 00233301

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
New SDS: 12/13/2016

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; Kow - 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; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOEL - Lot Of Lists™ - ChemADVISOR’s Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX - Mexico; Ne - Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; 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; 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
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