MATHESON

ask. . .The Gas Professionals™

MATHESON
909 LAKE CAROLYN PARKWAY
SUITE 1300
IRVING, TX 75039

314 - 1/10 : 1782

CHARLES BRUNGART INC
3970 NORTH ANDREWS AVE
FORT LAUDERDA FL 33309-5240

ATTN: SAFETY MANAGER/OPERATIONS MANAGER

RE: MATERIAL SAFETY DATA SHEETS

Dear Customer:

The Occupational Safety and Health Administration (OSHA) Hazardous Materials Regulations require employees to inform personnal of the hazards associated with the chemicals used in the work place. Material Safety Data Sheets (MSDS) are one means to provide the necessary information.

To aid in the training of your employees, the appropriate MSDS is attached for the product(s) you have recently ordered. The MSDS must be readily accessable to all employees who work in the area where the product(s) is used. If you resell the product(s), you are required to furnish a copy of the MSDS to your customers.

If you have questions concerning the Material Safety Data Sheets, or need further information on the safe handling of the product(s) you have ordered, please contact your local Matheson Tri-Gas sales office.

Sincerely,

Matheson Tri-Gas, Inc.
909 Lake Carolyn Parkway
Suite 1300
Irving, TX 75039
(800)284-0481

02223521/01330295

827-13F

MATHESON
TRI•GAS
ask. . .The Gas Professionals™

Safety Data Sheet

Material Name: NITROGEN, COMPRESSED GAS SDS ID: MAT16625

* * * Section 1 - PRODUCT AND COMPANY IDENTIFICATION * * *

Material Name: NITROGEN, COMPRESSED GAS

Manufacturer Information

MATHESON TRI-GAS, INC.

150 Allen Road, Suite 302

Basking Ridge, NJ 07920

General Information: 1-800-416-2505

Emergency#: 1-800-424-9300 (CHEMTREC)

Outside the US: 703-527-3887 (Call collect)

Chemical Family

inorganic, gas

Synonyms

MTG MSDS 67; DIATOMIC NITROGEN; DINITROGEN; NITROGEN; NITROGEN-14; NITROGEN GAS; UN 1066; N2; RTECS: QW9700000

Product Use

industrial

Usage Restrictions

None known.

* * * Section 2 - HAZARDS IDENTIFICATION * * *

EMERGENCY OVERVIEW

Color: colorless

Physical Form: gas

Odor: odorless

Health Hazards: difficulty breathing

Physical Hazards: Containers may rupture or explode if exposed to heat.

POTENTIAL HEALTH EFFECTS

Inhalation

Short Term: nausea, vomiting, tingling sensation, suffocation, convulsions, coma, headache, drowsiness, dizziness, loss of coordination, unconsciousness, fatigue, impairment of judgement, irregular heartbeat

Long Term: no information is available

Skin

Short Term: no information on significant adverse effects

Long Term: no information on significant adverse effects

Eye

Short Term: irritation

Long Term: no information on significant adverse effects

Ingestion

Short Term: ingestion of a gas is unlikely

Long Term: ingestion of a gas is unlikely

* * * Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS * * *

CAS	Component	Percent
7727-37-9	NITROGEN, COMPRESSED GAS	100

* * * 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

Wash exposed skin with soap and water.

Eyes

Flush eyes with plenty of water.

Ingestion

If a large amount is swallowed, get medical attention.

Note to Physicians

For inhalation, consider oxygen.

* * * Section 5 - FIRE FIGHTING MEASURES * * *

See Section 9 for Flammability Properties

NFPA Ratings: Health: 1 **Fire:** 0 **Reactivity:** 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Flammable Properties

Negligible fire hazard. Pressurized containers may rupture or explode if exposed to sufficient heat.

Extinguishing Media

Use extinguishing agents appropriate for surrounding fire.

Unsuitable Extinguishing Media

None known.

Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

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.

* * * Section 6 - ACCIDENTAL RELEASE MEASURES * * *

Occupational spill/release

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.

* * * Section 7 - HANDLING AND STORAGE * * *

Handling Procedures

Avoid breathing gas. Use only with adequate ventilation.

Storage Procedures

Store and handle in accordance with all current regulations and standards. Protect from sunlight. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.

* * * Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION * * *

Component Analysis

ACGIH, OSHA and NIOSH have not developed exposure limits for any of this product's components.

Component Biological Limit Values

There are no biological limit values for any of this product's components.

Ventilation

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face

Eye protection not required, but recommended.

Protective Clothing

Protective clothing is not required.

Glove Recommendations

Protective gloves are not required.

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.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

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.

* * * Section 9 - PHYSICAL AND CHEMICAL PROPERTIES * * *

Physical State:	Gas	**Appearance:**	Not available
Color:	colorless	**Physical Form:**	gas
Odor:	odorless	**Odor Threshold:**	Not available
Taste:	tasteless	**Melting/Freezing Point:**	-210 °C
Boiling Point:	-196 °C	**Flash Point:**	not combustible
Decomposition:	Not available	**LEL:**	Not applicable
UEL:	Not applicable	**Vapor Pressure:**	760 mmHg @ -196 °C
Vapor Density (air = 1):	0.967	**Density:**	1.2506 g/L
Specific Gravity (water=1):	0.967	**Water Solubility:**	1.6 % @ 20 °C
Log KOW:	0.67	**Auto Ignition:**	Not applicable
Viscosity:	0.01787 cP @ 27 °C	**Volatility:**	100 %
Molecular Weight:	28.0134	**Molecular Formula:**	N2

Solvent Solubility

Soluble: liquid ammonia

Slightly Soluble: alcohol

* * * Section 10 - STABILITY AND REACTIVITY * * *

Chemical Stability

Stable at normal temperatures and pressure.

Conditions to Avoid

Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.

Materials to Avoid

metals, oxidizing materials

Decomposition Products

oxides of nitrogen

Possibility of Hazardous Reactions

Will not polymerize.

* * * Section 11 - TOXICOLOGICAL INFORMATION * * *

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and no selected endpoints have been identified.

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, OSHA or DFG.

Irritation

No animal testing data available for skin or eyes.

Medical Conditions Aggravated by Exposure

None known.

Tumorigenic

No data available.

Mutagenic

No data available.

Reproductive Effects

No data available.

* * * Section 12 - ECOLOGICAL INFORMATION * * *

Component Analysis - Aquatic Toxicity

No LOLI ecotoxicity data are available for this product's components.

* * * 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

UN/NA #: UN1066 **Hazard Class:** 2.2

Required Label(s): 2.2

TDG Information

Shipping Name: Nitrogen, compressed

UN #: UN1066 **Hazard Class:** 2.2

Required Label(s): 2.2

* * * Section 15 - REGULATORY INFORMATION * * *

U.S. Federal Regulations

None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA 311/312

Acute Health: Yes **Chronic Health:** No **Fire:** No **Pressure:** Yes **Reactive:** No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
NITROGEN, COMPRESSED GAS	7727-37-9	No	Yes	Yes	Yes	Yes	Yes

Not regulated under California Proposition 65

Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
NITROGEN, COMPRESSED GAS	7727-37-9	Yes	DSL	EIN	Yes	Yes	No	Yes	Yes	Yes

*** Section 16 - OTHER INFORMATION ***

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; 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; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Other Information

Matheson Tri-Gas, Inc. makes no express or implied warranties, guarantees or representations regarding the product or the information herein, including but not limited to any implied warranty or merchantability or fitness for use. Matheson Tri-Gas, Inc. shall not be liable for any personal injury, property or other damages of any nature, whether compensatory, consequential, exemplary, or otherwise, resulting from any publication, use or reliance upon the information herein.

End of Sheet MAT16625

314 - 6/10 : 1787

MATHESON
TRI•GAS
ask...The Gas Professionals™

Safety Data Sheet

Material Name: OXYGEN, COMPRESSED GAS SDS ID: MAT12831

*** Section 1 - PRODUCT AND COMPANY IDENTIFICATION ***

Material Name: OXYGEN, COMPRESSED GAS

Manufacturer Information

MATHESON TRI-GAS, INC.

150 Allen Road, Suite 302

Basking Ridge, NJ 07920

General Information: 1-800-416-2505

Emergency#: 1-800-424-9300 (CHEMTREC)

Outside the US: 703-527-3887 (Call collect)

Chemical Family

inorganic, gas

Synonyms

MTG MSDS 71; OXYGEN; DIOXYGEN; MOLECULAR OXYGEN; OXYGEN MOLECULE; PURE OXYGEN; UN 1072; LOX; HYPEROXIA; O2; RTECS: RS2060000

*** Section 2 - HAZARDS IDENTIFICATION ***

EMERGENCY OVERVIEW

Color: colorless

Physical Form: gas

Odor: odorless

Health Hazards: No significant target effects reported.

Physical Hazards: Containers may rupture or explode if exposed to heat. May ignite combustibles.

POTENTIAL HEALTH EFFECTS

Inhalation

Short Term: irritation, chest pain, cough, changes in body temperature, nausea, difficulty breathing, irregular heartbeat, dizziness, disorientation, hallucinations, mood swings, pain in extremities, tremors, lung congestion, convulsions

Long Term: irritation, cough, chest pain, lung damage

Skin

Short Term: frostbite, blisters

Long Term: no information on significant adverse effects

Eye

Short Term: irritation, frostbite, blurred vision

Long Term: no information on significant adverse effects

Ingestion

Short Term: ingestion of a gas is unlikely

Long Term: ingestion of a gas is unlikely

* * * Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS * * *

CAS	Component	Percent
7782-44-7	OXYGEN, COMPRESSED GAS	100

* * * Section 4 - FIRST AID MEASURES * * *

Inhalation

If adverse effects occur, remove to uncontaminated area. Get 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

Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion

If a large amount is swallowed, get medical attention.

* * * Section 5 - FIRE FIGHTING MEASURES * * *

See Section 9 for Flammability Properties

NFPA Ratings: Health: 2 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Flammable Properties

Negligible fire hazard. Oxidizer. May ignite or explode on contact with combustible materials. Containers may rupture or explode if exposed to heat.

Extinguishing Media

carbon dioxide, regular dry chemical

Large fires: Use regular foam or flood with fine water spray.

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. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Use extinguishing agents appropriate for surrounding fire. Cool containers with water. Apply water from a protected location or from a safe distance.

* * * Section 6 - ACCIDENTAL RELEASE MEASURES * * *

Occupational spill/release

Stop leak if possible without personal risk. Avoid contact with combustible materials. Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering.

* * * Section 7 - HANDLING AND STORAGE * * *

Storage Procedures

Store and handle in accordance with all current regulations and standards. Protect from physical damage. Avoid heat, flames, sparks and other sources of ignition. Store in a clean, cool, dry place. Store in a well-ventilated area. Store below 125 F. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.

* * * Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION * * *

Component Analysis

ACGIH, OSHA and NIOSH have not developed exposure limits for any of this product's components.

Component Biological Limit Values

There are no biological limit values for any of this product's components.

Ventilation

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face

For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Protective Clothing

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

Glove Recommendations

Wear insulated gloves.

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.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

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.

* * * Section 9 - PHYSICAL AND CHEMICAL PROPERTIES * * *

Physical State:	Gas	Appearance:	Not available
Color:	colorless	Physical Form:	gas
Odor:	odorless	Odor Threshold:	Not available
Taste:	tasteless	Melting/Freezing Point:	-218.4 °C
Boiling Point:	-182.96 °C	Decomposition:	Not available
Vapor Pressure:	760 mmHg @ -183 °C	Vapor Density (air = 1):	1.43
Density:	1.309 g/L @ 25 °C	Specific Gravity (water=1):	1.14 @ -183 °C (liquid)
Water Solubility:	3.2 % @ 25 °C	Auto Ignition:	Not available
Viscosity:	0.02075 cP @ 25 °C	Molecular Weight:	31.9988
Molecular Formula:	O2		

Solvent Solubility

Soluble: alcohol

* * * Section 10 - STABILITY AND REACTIVITY * * *

Chemical Stability

Stable at normal temperatures and pressure.

Conditions to Avoid

Avoid contact with combustible materials. Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.

Materials to Avoid

combustible materials, halo carbons, metals, bases, reducing agents, amines, metal salts, oxidizing materials

Decomposition Products

miscellaneous decomposition products

Possibility of Hazardous Reactions

Will not polymerize.

* * * Section 11 - TOXICOLOGICAL INFORMATION * * *

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and no selected endpoints have been identified.

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, OSHA or DFG.

* * * Section 12 - ECOLOGICAL INFORMATION * * *

Component Analysis - Aquatic Toxicity

No LOLI ecotoxicity data are available for this product's components.

* * * Section 13 - DISPOSAL CONSIDERATIONS * * *

Disposal Methods

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

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: Oxygen, compressed

UN/NA #: UN1072 **Hazard Class:** 2.2

Required Label(s): 2.2, 5.1

TDG Information

Shipping Name: Oxygen, compressed

UN #: UN1072 **Hazard Class:** 2.2

Required Label(s): 2.2, (5.1)

*** Section 15 - REGULATORY INFORMATION ***

U.S. Federal Regulations

None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA 311/312

Acute Health: Yes **Chronic Health:** No **Fire:** Yes **Pressure:** Yes **Reactive:** No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
OXYGEN, COMPRESSED GAS	7782-44-7	No	Yes	No	Yes	Yes	Yes

Not regulated under California Proposition 65

Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
OXYGEN, COMPRESSED GAS	7782-44-7	Yes	DSL	EIN	Yes	Yes	No	Yes	Yes	Yes

314 - 10/10 : 1791

* * * Section 16 - OTHER INFORMATION * * *

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; 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; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Other Information

Matheson Tri-Gas, Inc. makes no express or implied warranties, guarantees or representations regarding the product or the information herein, including but not limited to any implied warranty or merchantability or fitness for use. Matheson Tri-Gas, Inc. shall not be liable for any personal injury, property or other damages of any nature, whether compensatory, consequential, exemplary, or otherwise, resulting from any publication, use or reliance upon the information herein.

End of Sheet MAT12831

314 - 10/10 : 1791