Safety Data Sheet

Material Name: Ethyne, Ethine **SDS ID: 00244211**

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
Ethyne, Ethine

Synonyms
Acetylene; Welding gas; Narcylen; Acetylen; Vinylene

Chemical Family
Hydrocarbons, aliphatic

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.
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)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Flammable Gases - Category 1
Gases Under Pressure - Dissolved gas
Specific target organ toxicity - Single exposure - Category 3

GHS Label Elements

Symbol(s)

Signal Word
Danger

Hazard Statement(s)

Extremely flammable gas.
Contains gas under pressure; may explode if heated.
May cause drowsiness and dizziness.
May displace oxygen and cause rapid suffocation.

Precautionary Statement(s)

Prevention
Keep away from heat, sparks, open flame, and hot surfaces - No smoking.
Avoid breathing gas.
Use only outdoors or in a well-ventilated area.

Response
Leaking gas fire.
Do not extinguish, unless leak can be stopped safely.
Eliminate all ignition sources if safe to do so.
IF INHALED.
Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.

Storage
Store in a well-ventilated place.
Protect from sunlight.
Keep container tightly closed.
Store locked up.

Disposal
Dispose in accordance with all applicable regulations.

Other Hazards
Rapid release of compressed gas may cause frostbite.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
74-86-2	Acetylene	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

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
frostbite, suffocation, central nervous system depression

Delayed
no information on significant adverse effects.

Note to Physicians
For inhalation, consider oxygen.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media
carbon dioxide, regular dry chemical, Large fires: water spray or fog

Unsuitable Extinguishing Media
None known.

Special Hazards Arising from the Chemical
Severe explosion hazard. Vapor/air mixtures are explosive. Electrostatic discharges may be generated by flow or agitation resulting in ignition or explosion.

Hazardous Combustion Products
Oxides of carbon

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. 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. 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: Stop leak if possible without personal risk. Let burn unless leak can be stopped immediately. Evacuation radius: 1600 meters (1 mile). For smaller tanks or cylinders, extinguish and isolate from other flammables. Do not attempt to extinguish fire unless flow of material can be stopped first. Flood with fine water spray. Apply water from a protected location or from a safe distance. Consider downwind

evacuation if material is leaking. Stay upwind and keep out of low areas. Avoid inhalation of material or combustion by-products.

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
Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition. Stop leak if possible without personal risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Use water spray to reduce vapors or divert vapor cloud drift. Do not direct water at spill or source of leak. Ventilate closed spaces before entering.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling
Keep away from heat, sparks, open flame, and hot surfaces - No smoking. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Dissipate static electricity during transfer by earthing (grounding and bonding) containers and equipment.

Conditions for Safe Storage, Including any Incompatibilities
Store in a well-ventilated place.
Protect from sunlight.
Keep container tightly closed.
Store locked up.
Store and handle in accordance with all current regulations and standards. Protect from physical damage. Store outside or in a detached building. Store in a cool, dry place. Keep container tightly closed. Store in a well-ventilated area. Avoid heat, flames, sparks and other sources of ignition. Grounding and bonding required. Secure to prevent tipping. Store in a tightly closed container. Protect from sunlight. Keep locked up. Keep separated from incompatible substances.

Incompatible Materials
metals, halogens, oxidizing materials, metal carbide, reducing agents, halo carbons

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Acetylene	74-86-2
ACGIH:	(See Appendix F: Minimal Oxygen Content)
NIOSH:	2500 ppm Ceiling; 2662 mg/m3 Ceiling

EU - Occupational Exposure (98/24/EC) - Binding Biological Limit Values and Health Surveillance Measures
There are no biological limit values for any of this product's components.

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

Engineering Controls
Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust 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. 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.

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, but recommended.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	colorless gas	Physical State	gas
Odor	sweet odor,garlic odor	Color	colorless
Odor Threshold	Not available	pH	Not available
Melting Point	Not available	Boiling Point	Not available
Freezing point	Not available	Evaporation Rate	Not available
Boiling Point Range	Not available	Flammability (solid, gas)	Flammable gas

Autoignition	305 °C (581 °F)	Flash Point	(Flammable gas)
Lower Explosive Limit	2.5 %	Decomposition	Not available
Upper Explosive Limit	100 %	Vapor Pressure	760 mmHg at -84 °C
Vapor Density (air=1)	0.9	Specific Gravity (water=1)	Not available
Water Solubility	0.94 % (@ 25 °C)	Partition coefficient: n-octanol/water	Not available
Viscosity	0.01 cp	Solubility (Other)	Not available
Bioconcentration Factor (BCF)	3.48	Density	1.1747 g/L at 0 °C
Henry's Law Constant	0.0217 atm-m3/mole at 25 °C	Log KOW	0.37
Physical Form	gas	Sublimation	-84 °C (-119 °F)
Molecular Formula	H-C-C-H	Molecular Weight	26.04

Solvent Solubility

Soluble

acetone, Benzene, chloroform, ether

Section 10 - STABILITY AND REACTIVITY

Reactivity

May decompose on contact with heat.

Chemical Stability

May decompose violently on heating. May explode when heated. In its gaseous state, may decompose explosively at elevated pressure.

Possibility of Hazardous Reactions

Polymerizes with evolution of heat. Avoid contact with curing agents, accelerators, and/or initiators.

Conditions to Avoid

Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

Incompatible Materials

metals, halogens, oxidizing materials, metal carbide, reducing agents, halo carbons

Hazardous decomposition products

Oxides of carbon

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation
nausea, vomiting, chest pain, wheezing, headache, drowsiness, dizziness, loss of coordination, bluish skin color, suffocation, lung congestion, coma

Skin Contact
rash

Eye Contact
irritation

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

Immediate Effects
frostbite, suffocation, central nervous system depression

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
central nervous system

Specific Target Organ Toxicity - Repeated Exposure

No target organs identified.

Aspiration hazard
Not applicable.

Medical Conditions Aggravated by Exposure
None known.

Additional Data
Stimulants such as epinephrine may induce ventricular fibrillation.

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. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001. D003.

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:Acetylene, dissolved
Hazard Class: 2.1
UN/NA #: UN1001
Required Label(s): 2.1

IMDG Information:
Shipping Name:Acetylene, dissolved
Hazard Class: 2.1

UN#: UN1001
Required Label(s): 2.1

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 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)
Acute Health: Yes Chronic Health: No Fire: Yes Pressure: Yes Reactivity: Yes

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
Acetylene	74-86-2	Yes	Yes	Yes	Yes	Yes

Not listed under California Proposition 65

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
ABF

Component Analysis - Inventory
Acetylene (74-86-2)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

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

Summary of Changes
Updated: 05/01/2015

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; 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; 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; LLV - Level Limit Value; 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; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; 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

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