



# ETHYLENE (1,1-D2, 98%)

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 17/12/2010

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Version: 6.0

DLM-2446

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product form	: Substance
Substance name	: ETHYLENE (1,1-D2, 98%)
EC Index-No.	: 601-010-00-3 (Unlabeled)
EC-No.	: 200-815-3 (Unlabeled)
CAS-No.	: 6755-54-0
Product code	: DLM-2446
Formula	: H2C=CD2
Synonyms	: Ethene

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### 1.2.1. Relevant identified uses

Main use category	: Professional use
Industrial/Professional use spec	: For professional use only

#### 1.2.2. Uses advised against

No additional information available

### 1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.  
50 Frontage Road  
Andover, MA 01810  
USA

USA: 1-800-322-1174 Int: 1-978-749-8000

[cilsales@isotope.com](mailto:cilsales@isotope.com) [www.isotope.com](http://www.isotope.com)

### Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)

International: 1-703-741-5970 (24 hours)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flam. Gas 1	H220
Press. Gas (Comp.)	H280
STOT SE 3	H336

Full text of hazard classes and H-statements : see section 16

#### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

F+; R12  
R67  
R5

Full text of R-phrases: see section 16

#### GHS-US classification

Flam. Gas 1	H220
Press. Gas (Comp.)	H280
STOT SE 3	H336

Full text of H statements : see section 16

#### Adverse physicochemical, human health and environmental effects

Central Nervous System.

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### 2.2. Label elements

#### Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



Signal word (CLP) :

Danger

Hazard statements (CLP) :

H220 - Extremely flammable gas  
H280 - Contains gas under pressure; may explode if heated  
H336 - May cause drowsiness or dizziness

Precautionary statements (CLP) :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P261 - Avoid breathing dust, fume, gas, mist, spray, vapors.  
P271 - Use only outdoors or in a well-ventilated area.  
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P312 - Call a doctor if you feel unwell.  
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381 - Eliminate all ignition sources if safe to do so.  
P403 - Store in a well-ventilated place.

#### GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H220 - Extremely flammable gas  
H280 - Contains gas under pressure; may explode if heated  
H336 - May cause drowsiness or dizziness

Precautionary statements (GHS-US) :

P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking.  
P261 - Avoid breathing dust, fume, gas, mist, spray, vapors.  
P271 - Use only outdoors or in a well-ventilated area.  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P312 - Call a poison center or doctor if you feel unwell  
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381 - Eliminate all ignition sources if safe to do so.  
P403 - Store in a well-ventilated place.  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.  
P405 - Store locked up.  
P410+P403 - Protect from sunlight. Store in a well-ventilated place.  
P501 - Dispose of contents/container to Comply with applicable regulations

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
ETHYLENE (1,1-D2, 98%)	(CAS-No.) 6755-54-0 (EC-No.) 200-815-3 (Unlabeled) (EC Index-No.) 601-010-00-3 (Unlabeled)	100	F+; R12 R67 R5
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
ETHYLENE (1,1-D2, 98%)	(CAS-No.) 6755-54-0 (EC-No.) 200-815-3 (Unlabeled) (EC Index-No.) 601-010-00-3 (Unlabeled)	100	Flam. Gas 1, H220 Press. Gas (Comp.), H280 STOT SE 3, H336

Full text of R- and H- phrases: see section 16

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Name	Product identifier	%	GHS-US classification
ETHYLENE (1,1-D2, 98%) (Main constituent)	(CAS-No.) 6755-54-0	100	Flam. Gas 1, H220 Press. Gas (Comp.), H280 STOT SE 3, H336

Full text of H-phrases: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general	: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
First-aid measures after inhalation	: If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
First-aid measures after skin contact	: Wash off with soap and plenty of water. Consult a physician.
First-aid measures after eye contact	: Flush eyes with water as a precaution.
First-aid measures after ingestion	: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation. Vapours may cause drowsiness and dizziness.
Symptoms/effects after skin contact	: May be harmful if absorbed through skin. May cause skin irritation.
Symptoms/effects after eye contact	: Contact may cause eye irritation.
Symptoms/effects after ingestion	: May be harmful if swallowed.

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard	: Extremely flammable gas.
Explosion hazard	: Contains gas under pressure; may explode if heated.

### 5.3. Advice for firefighters

Firefighting instructions	: Use water spray to cool unopened containers.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures : Use personal protective equipment, and ensure adequate ventilation. Avoid breathing vapors, mist, gas. Remove ignition sources, and move personnel to safe area. Vapors accumulate especially in low areas to form explosive concentrations.

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### 6.3. Methods and material for containment and cleaning up

For containment : Contain spillage, then collect with non-combustible absorbent material. Disposal should be in accordance with applicable Federal, State and local regulations.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Additional hazards when processed : Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent build up of electrostatic charge.

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Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep container tightly closed in a dry and well-ventilated place.  
Storage conditions : Store at room temperature away from light and moisture.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### ETHYLENE (1,1-D2, 98%) (6755-54-0)

Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	200.0000000 ppm Asphyxia. Not classifiable as a human carcinogen
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### 8.2. Exposure controls

Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



Hand protection : Wear suitable protective clothing and gloves.  
Eye protection : Wear safety glasses with side shields (or goggles) and a face shield.  
Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.  
Respiratory protection : When appropriate, use NIOSH/CEN approved respirator.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Gas  
Appearance : Liquefied gas  
Molecular mass : 30.07 g/mol (Labeled)  
Color : Colorless  
Odor : No data available  
Odor threshold : No data available  
pH : No data available  
Relative evaporation rate (butyl acetate=1) : No data available  
Melting point : -169 °C (-272 °F) - lit  
Freezing point : No data available  
Boiling point : -104 °C (-155 °F) - lit  
Flash point : -100 °C (-148 °F) - closed cup  
Auto-ignition temperature : 450 °C (842 °F)  
Decomposition temperature : No data available  
Flammability (solid, gas) : No data available  
Vapor pressure : 35504.3 hPa (26,630.4 mmHg) at 20 °C (68 °F)  
Relative vapor density at 20 °C : 0.97 - (Air = 1.0)  
Relative density : No data available  
Solubility : No data available  
Log Pow : No data available  
Log Kow : No data available  
Viscosity, kinematic : No data available  
Viscosity, dynamic : No data available  
Explosive properties : No data available  
Oxidizing properties : No data available  
Explosion limits : 2.7 - 36 % (V)

### 9.2. Other information

No additional information available

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### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No additional information available

#### 10.2. Chemical stability

Stable if stored under recommended conditions.

#### 10.3. Possibility of hazardous reactions

No additional information available

#### 10.4. Conditions to avoid

No additional information available

#### 10.5. Incompatible materials

Strong oxidizing agents, Carbon tetrachloride, Chlorine, Copper, Vinyl compounds.

#### 10.6. Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: May cause drowsiness or dizziness.
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Nausea. Dizziness. Headache. Narcosis. This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation. Vapours may cause drowsiness and dizziness.
Symptoms/effects after skin contact	: May be harmful if absorbed through skin. May cause skin irritation.
Symptoms/effects after eye contact	: Contact may cause eye irritation.
Symptoms/effects after ingestion	: May be harmful if swallowed.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

No additional information available

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Results of PBT and vPvB assessment

No additional information available

#### 12.6. Other adverse effects

No additional information available

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### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

- Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.
- Product/Packaging disposal recommendations : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
- Ecology - waste materials : Dispose of as unused product.

### SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

#### 14.1. UN number

- UN-No.(DOT) : 1962
- DOT NA no. : UN1962

#### 14.2. UN proper shipping name

- Proper Shipping Name (DOT) : Ethylene
- Class (DOT) : 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115
- Hazard labels (DOT) : 2.1 - Flammable gas



- DOT Packaging Exceptions (49 CFR 173.xxx) : 306
- DOT Packaging Non Bulk (49 CFR 173.xxx) : 304
- DOT Packaging Bulk (49 CFR 173.xxx) : 302
- Marine pollutant : No

#### 14.3. Additional information

- Other information : No supplementary information available.
- Special transport precautions : IATA/DOT: Not permitted on passenger aircraft.

#### Overland transport

- Class (ADR) : 2 - Gases
- Hazard identification number (Kemler No.) : 23
- Classification code (ADR) : 2F
- Hazard labels (ADR) : 2.1 - Flammable gases



Orange plates :



- Tunnel restriction code (ADR) : B/D
- Limited quantities (ADR) : 0
- EAC : 2SE
- Excepted quantities (ADR) : E0

#### Transport by sea

- DOT Vessel Stowage Location : E - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.
- DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"
- MFAG-No : 116P

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### Air transport

DOT Quantity Limitations Passenger aircraft/rail : Forbidden  
(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 150 kg  
CFR 175.75)

Civil Aeronautics Law : Gases under pressure/Gases flammable under pressure

### 14.4. Environmental hazards

Other information : No supplementary information available.

### 14.5. Special precautions for user

Special transport precautions : IATA/DOT: Not permitted on passenger aircraft.

### 14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

ETHYLENE (1,1-D2, 98%) (6755-54-0)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of United States SARA Section 302
SARA Section 311/312 Hazard Classes	Fire hazard Sudden release of pressure hazard Delayed (chronic) health hazard
SARA Section 313 - Emission Reporting	Subject to reporting requirements of United States SARA Section 313

### 15.2. International regulations

#### CANADA

ETHYLENE (1,1-D2, 98%) (6755-54-0)
Listed on the Canadian DSL (Domestic Substances List)

#### 15.2.1. National regulations

No additional information available

### 15.3. US State regulations

ETHYLENE (1,1-D2, 98%)(6755-54-0)	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List

## SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of R-, H- and EUH-phrases:

Flam. Gas 1	Flammable gases Category 1
Press. Gas (Comp.)	Gases under pressure Compressed gas
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H220	Extremely flammable gas

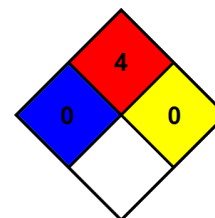
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H280	Contains gas under pressure; may explode if heated
H336	May cause drowsiness or dizziness
R12	Extremely flammable
R5	Heating may cause an explosion
R67	Vapors may cause drowsiness and dizziness
F+	Extremely flammable

- NFPA health hazard : 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.
- NFPA fire hazard : 4 - Materials that rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and burn readily.
- NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



### Hazard Rating

- Health : 0 Minimal Hazard - No significant risk to health
- Flammability : 4 Severe Hazard
- Physical : 3 Serious Hazard

### CIL Substance SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*