



Safety Data Sheet

Acetylene-d₂ (gas)

Section 1. Chemical product and company identifications

Product code: D-0003
Chemical formula: C₂D₂
CAS: 1070-74-2
CAS (unlabelled): 74-86-2
Synonyms: Ethyne

Supplier / Manufacturer:

C/D/N Isotopes Inc.

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In case of emergency:

TOXYSKAN HOTLINE: + 8 6 1 3 6 6 7 1 2 6 8 6 1

Section 2. Hazards identifications

Physical state: Gas

Warning: Extremely flammable gas. May react explosively even in the absence of air at elevated pressure and/or temperature.

Routes of entry: Inhalation, ingestion, skin and eyes

GHS (Globally Harmonized System of Classification and Labelling of Chemicals):

GHS Classification: - Flammable gases (Category 1)

GHS Label elements: - Pictograms: 
- Signal word: Danger

Hazards statement: - H220 Extremely flammable gas.
- H231 May react explosively even in the absence of air at elevated pressure and/or temperature.

Precautionary statement: - P210 Keep away from heat/ hot surfaces/ sparks/ open flames/ ignition sources. No smoking.

Section 3. Composition and information on ingredients

| <u>Name</u> | <u>CAS</u> | <u>Concentration %</u> |
|--------------------------|------------|------------------------|
| Acetylene-d ₂ | 1070-74-2 | > 98 |

Section 4. First aid measures

Eye contact: Flush eyes with water as a precaution.

Skin contact: Wash off with soap and plenty of water. Consult a physician.

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Section 5. Firefighting measures

Flammability of the product: Flammable in the presence of an oxidizing gas (e.g. air), a source of ignition, and when the concentration of the gas is between the lower and upper explosive limits. Keep away from heat/sparks/open flame/hot surface/oxidizing gas. No smoking.

Lower explosion limit: 2.5 Vol%

Upper explosion limit: 82 Vol%

Auto-ignition temperature: 305 °C (581 °F)

Flash point: -18 °C (0 °F)

Products of combustion: Hazardous decomposition products formed under fire conditions: Carbon oxides.

Firefighting media and instructions: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Section 6. Accidental release measures

Personal precautions: Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition.

Environmental precautions: Do not let product enter drains.

Methods for cleaning up: Ventilate area.

Section 7. Handling and storage

Handling: Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Provide appropriate exhaust ventilation. Keep away from sources of ignition - No smoking.

Storage: Store at room temperature. Adequate ventilation. Protect from heat and ignition sources.

Section 8. Exposure Controls, Personal Protections

Engineering controls: Use mechanical exhaust or laboratory fumehood to avoid exposure.

Eyes: Safety glasses with side-shields conforming to NIOSH (US) or EN 166 (EU).

Respiratory: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US).

Hands: Handle with gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Skin/body: Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Section 9. Physical and chemical properties (unlabelled)

Molecular weight: 26.04 g/mol

Physical status: Gas

Color: Colorless

Odour: Garlic like

Density: No data available

Melting point: -80.6 °C (-113 °F) (sublimes)

Boiling point: No data available

Vapour pressure: No data available

Vapour density: 0.91 (Air = 1)

Partition coefficient (octanol/water): log Pow: 0.37

Water solubility: 1.2 g/L

Section 10. Stability and reactivity

Stability and reactivity: Forms explosive acetylides with copper, silver and mercury. Do not use alloy containing more than 65% copper. Do not allow pressures above 15 psi (103 kPa).

Incompatibility: Oxidizing agents, halogenated compounds, halogens, copper, silver, mercury, brasses containing >65% copper and brazing materials containing silver or copper.

Products of combustion: Hazardous decomposition products formed under fire conditions: Carbon oxides.

Reactivity conditions: Heat, flames and sparks.

Section 11. Toxicological information (unlabelled)

Toxicological data: Acetylene

Information on ingredients:

| <u>Name</u> | <u>CAS</u> | <u>LD₅₀</u> | <u>LC₅₀</u> |
|-------------|------------|------------------------|------------------------|
| Acetylene | 74-86-2 | No data available | No data available |

Potential acute effects

- **Eyes:** May cause eye irritation.
- **Skin:** May be harmful if absorbed through skin. May cause skin irritation.
- **Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation.
- **Ingestion:** May be harmful if swallowed.

Potential chronic effects

- **Carcinogenic effects:** IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- **Mutagenic effects:** No data available.
- **Teratogenic effects:** No data available.
- **Medical conditions aggravated by overexposure:** No data available.

Section 12. Ecological information

Ecological data:

| <u>Name</u> | <u>Results</u> | <u>Species</u> | <u>Period</u> |
|-------------|-------------------|----------------|---------------|
| Acetylene | No data available | | |

Effects on environment: No data available.

Mobility: No data available.

Environmental precautions: No data available.

Persistence and degradability: No data available.

Bioaccumulative potential: Will not bioconcentrate.

Section 13. Disposal considerations

Waste disposal: Contact a licensed professional waste disposal service to dispose of this material.

Section 14. Transportation information

Classification DOT/IMDG/IATA label:

Shipping name: Acetylene, solvent free

UN number: UN3374

Class: 2.1

Packaging group: None

Additional information: None

Section 15. Regulatory information

UNITED STATES: NFPA classification



Health: 0
Flammable: 4
Reactivity: 2
Special conditions: None

Legend: 4: Severe, 3: High, 2: Moderate, 1: Slightly, 0: Not hazardous

U.S. Federal regulations:

TSCA 8(b) inventory: Acetylene

SARA 302/304/311/312 extremely hazardous substances: Not Listed

SARA 302/304 emergency planning and notification: Not Listed

SARA 302/304/311/312 hazardous chemicals: Not Listed

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard: Listed

CWA (Clean Water Act) 307: Not Listed

CWA (Clean Water Act) 311: Not Listed

CAA (Clean Air Act) 112 accidental release prevention: Not Listed

CAA (Clean Air Act) 112 regulated flammable substances: Not Listed

CAA (Clean Air Act) 112 regulated toxic substances: Not Listed

State regulations:

DEA List I Chemicals (Precursor Chemicals): Not Listed

DEA List II Chemicals (Essential Chemicals): Not Listed

Substances in Massachusetts: Listed

Dangerous substances in New Jersey: Listed

New York – Dangerous substances with acute effects: Not Listed

Dangerous substances in Pennsylvania – right to know: Listed

WHMIS (Canada):



B1 - Flammable gas

Section 16. Additional information

References:

- ANSI Z400.1, MSDS Standard, 2001.
- Manufacturer's Material Safety Data Sheet.
- 29CFR Part1910.1200 OSHA MSDS Requirements.
- 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. -Canada
- Gazette Part II, Vol. 122, No. 2 Registration SOR/88-64 31 December, 1987 Hazardous Products Act "Ingredient Disclosure List".
- Federal act on the controlled products
- Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2002.
- Toxicological repertory, HSC.
- Material safety data sheet from the components.

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