



## Product Stewardship Summary Acetylene

This product stewardship summary is intended to give general information about acetylene or categories of acetylene addressed. It is not intended to provide an in-depth discussion of all health and safety information. Additional information on this chemical is available through the applicable Safety Data Sheet which must be consulted before using this chemical. The product stewardship summary does not supplant or replace required regulatory and/or legal communication documents.

### Chemical Identity:

Acetylene is a colorless gas at room temperature and has garlic-like pungent odor. It is extremely flammable gas and is explosive when exposed to high heat, pressure or flame. Acetylene is produced as a by-product of petroleum refining and of ethylene production by steam cracking of hydrocarbons. Acetylene is composed of two hydrogen and two carbon atoms and is a member of a group of hydrocarbons known as alkynes or acetylenes. Acetylene is unsaturated because its two carbon atoms are bonded together in a triple bond.



**CAS Number:** 74-86-2      **CAS Name:** Acetylene      **Chemical Formula:** C<sub>2</sub>H<sub>2</sub>  
**Synonyms:** Ethine, Ethyne, Acetylen, Narcylen

### Product Uses:

Chevron Phillips Chemical's acetylene is mainly used as a chemical intermediate/raw material in order to synthesize other chemicals. It is also used in the metal working industry for welding and metal cutting.

### Physical/Chemical Properties:

Acetylene is classified as a highly flammable, category 4 gas under NFPA (National Fire Protection Association) and a category 1 gas both under the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals and by the Occupational Safety and Health Administration (OSHA). Acetylene is an explosion hazard and may react vigorously with other materials to produce explosive mixtures. Maintenance of special handling and storage procedures is required.

### Health Information:

Based on the available data for similar materials and the compounds, acetylene is not acutely toxic as per GHS. It is a simple asphyxiant, meaning at high concentration it could cause suffocation by displacement of oxygen. Inhalation exposure to high concentrations may cause central nervous system effects and, possibly, cardiac sensitization. Prolonged or repeated inhalation exposure at low concentrations is not expected to cause adverse health effects. Acetylene gas is not expected to be an acute skin or eye irritant or sensitizer. There is no evidence that long-term exposure causes any adverse developmental, reproductive or

carcinogenic effects in humans. The impurities present in the acetylene product are not expected to present a human health hazard.

### **Environmental Information:**

Based on the available data, acetylene is a gas and most of it will partition into the atmosphere where it will readily biodegrade. It is not expected to separate into water or soil, or bioaccumulate. Calculated acute toxicity values suggest that acetylene and the impurities are not harmful to aquatic organisms.

### **Exposure Potential:**

Since acetylene is produced, stored and transported in closed systems, exposure to the environment is anticipated to be low to negligible. A small amount of acetylene may be released to the environment in gaseous fugitive emissions.

- *Workplace use:* This refers to potential exposure of acetylene gas to persons in a manufacturing facility or through various industrial applications. Manufacturing and transport involving acetylene are usually conducted in closed systems, so human exposure is likely to be very limited.
- *Consumer use:* There is no direct consumer use of acetylene. Non-occupational exposure to acetylene is expected to be limited to exposure following inadvertent release of the product.
- *Potential environmental release:* Acetylene is stored and transported in closed systems. Exposure to the environment is expected to be very low. Chevron Phillips Chemical is committed to operating in an environmentally responsible manner and has adopted the American Chemistry Council's Responsible Care<sup>®</sup> initiative.

### **Risk Management:**

Chevron Phillips Chemical is committed to product stewardship and doing business responsibly. We endeavor to provide sufficient information for the safe use and handling of all our products. To that end, Safety Data Sheets are provided to customers.

### **Regulatory Information:**

Regulations exist that govern the manufacture, sale, transportation, use and/or disposal of Acetylene. These regulations may vary by city, state, country or geographic region. Additional helpful information may be found by consulting the relevant product Safety Data Sheet and local and Federal regulations.

### **Sources of Additional Information:**

- American Chemistry Council Acetylene Panel (2007) High Production Volume Challenge Robust Summaries and Test Plan for Acetylene: <http://www.epa.gov/chemrtk/pubs/summaries/acetylen/c15005tc.htm>
- Organization for Economic Cooperation and Development (OECD) – eChemPortal web-based search tool (use applicable CAS No): <http://www.echemportal.org/echemportal>
- European Chemicals Agency (ECHA) – Information on Registered Substances: <http://apps.echa.europa.eu/registered/registered-sub.aspx>

- Chevron Phillips Chemical's Safety Data Sheets: <http://www.cpchem.com/en-us/pages/msdssearch.aspx>

**Conclusion:** Acetylene is mainly used as a raw material in order to synthesize other chemicals. It is also used in the metal working industry for welding and metal cutting. Acetylene is a highly flammable gas. It is not acutely toxic and is not expected to be a skin or eye irritant, or sensitizer. There is no evidence that long-term exposure can cause any adverse developmental, reproductive or carcinogenic effects in humans. Appropriate personal protective equipment practices and labeling, storage, and transportation procedures should be followed. Further, the relevant product Safety Data Sheets and applicable regulatory guidelines and requirements, including, but not limited to, OSHA guidelines, should be consulted prior to use or handling of acetylene.

**Contact Information:** <http://www.cpchem.com/>

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