

## ETHYLENE

This Product Safety Summary document is a high-level summary intended to provide the general public with an overview of product safety information on this chemical substance. It is not intended to provide emergency response, medical or treatment information, or to provide a discussion of all safety and health information. This document is not intended to replace the (Material) Safety Data Sheet. Warnings and handling precautions provided below are not intended to replace or supersede manufacturers' instructions and warning for their consumer products which may contain this chemical substance.

### 1. Chemical Identity

Ethylene is an olefin stream, generally manufactured as part of the catalytic cracking or steam cracking processes. It is derived from feedstocks that are of "petroleum" origin.

**CAS No.:**  
74-85-1

**Chemical Name:**  
Ethylene

**Other Names:**  
Ethene, Olefiant gas

### 2. Product Uses

Ethylene is primarily used as a feedstock to manufacture other industrial chemicals, including ethylene oxide, ethyl benzene, and polyethylene.

### 3. Physical / Chemical Properties

Ethylene is highly flammable and is a reactive chemical because of its olefinic bond. This allows it to undergo chemical reactions under selective and controlled conditions. It is typically handled in industrial facilities where safe conditions regarding ignition sources and ventilation are adequately controlled. In industrial facilities, ethylene can be refrigerated to very cold temperatures and stored or shipped as a liquid. At ambient temperature and pressure, ethylene is a gas. The flash point for ethylene is <-148°F / <-100°C.

### 4. Health Information

Ethylene is generally believed to have low acute toxicity at the levels found in the workplace. At high concentrations, ethylene is an asphyxiant (the level of oxygen available to breathe is reduced); high level exposure can also lead to drowsiness and dizziness and may cause central nervous system depression. However, the amount of ethylene in the air necessary to have these effects is so high that the atmosphere would be in the explosive range of airborne concentrations.

### 5. Additional Hazard Information

Should skin or eye contact occur to ethylene in the liquid form, tissue freezing, severe cold burn, and/or frostbite may result from rapidly expanding liquid. If frostbite occurs, immerse the involved area in water at body temperature. Keep immersed for 20 to 40 minutes and seek medical attention.

### 6. Food Contact Regulated Uses

This product is not claimed as compliant for food contact uses.

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### 7. Environmental Information

In the environment, ethylene goes into the air and rapidly degrades. Because the tendency of ethylene to move from water to air, water contamination and chronic aquatic toxicity are not expected. Ethylene is a volatile organic compound (VOC). Considerable measures are taken to prevent its release to the atmosphere.

### 8. Exposure Potential

- **Workplace exposure** – This refers to potential exposure in a manufacturing facility or industrial workplace. Generally, exposure of personnel in manufacturing facilities is relatively low because the process, storage and handling operations are closed, with little potential for releases to the air. The American Conference of Government Industrial Hygienists (ACGIH) recommends limiting occupational exposure to no more than 200 parts per million (ppm) as a time-weighted average over an 8-hour work day. Since ethylene is used in a closed process, exposures are unlikely to approach these levels.
- **Consumer use of products containing ethylene** – Ethylene is not sold to the general public. Exposure to consumers would be expected to be low, far below the recommended occupational exposure levels described above.
- **Environmental releases** – As a chemical manufacturer, we are committed to operating in an environmentally responsible manner everywhere we do business. Our efforts are guided by in-depth scientific understanding of the environmental impact of our operations, as well as by the social and economic needs of the communities in which we operate. Industrial spills or releases are rare; however a spill may pose a flammability issue. Our operational improvement targets and plans are based on driving incidents with real environmental impact to zero and delivering superior environmental performance.

### 9. Manufacture of Product

- **Process** – Ethylene is manufactured as part of catalytic cracking processes or steam cracking processes found in chemical plants or petroleum refineries. Cracking processes allow the conversion of crude oil fractions into other useful products.

### 10. Risk Management

- **Workplace Risk Management** – When using this product, avoid breathing the material, make sure that there is adequate ventilation, and use non-sparking tools and explosion-proof equipment. Always use thermally protective, chemical resistant gloves to protect your hands and skin and always wear eye protection such as chemical goggles and a face shield. Do not eat, drink, or smoke where chemicals are handled, processed, or stored. If liquid ethylene contacts the skin or eyes, watch for frostbite and seek medical attention. If ethylene gets into your eyes, rinse eyes thoroughly for at least 15 minutes with tap water. If irritation occurs, get medical assistance. Please refer to the (Material) Safety Data Sheet.
- **Consumer Risk Management** - This chemical is not sold directly to the public for general consumer uses. If exposure should occur, it is expected to be infrequent and of short duration.

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### 11. Regulatory Information

Regulations may exist that govern the manufacture, sale, transportation, use and/or disposal of this product and may vary by city, state, country or geographic region. Additional helpful information may be found by consulting the relevant ExxonMobil (Material) Safety Data Sheet at:

- <http://www.msds.exxonmobil.com>

### 12. Conclusion Statements

Ethylene ...

- is a widely used industrial chemical feedstock used to make other industrial chemicals.
- is low in acute toxicity at typical exposures, however may cause frostbite if exposure to refrigerated liquid occurs.
- is not expected to cause adverse environmental effects at levels typically found in the workplace or environment.
- is extremely flammable; use only with good ventilation and avoid all ignition sources.

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