

PRODUCT BACKGROUNDER

Butene-2

Important! For detailed information on this product and emergency measures, obtain the Material Safety Data Sheet (MSDS). In the case of an emergency, please call our 24-hour hotline at 1-800-561-6682 or 1-403- 314-8767.

May also be called: Liquefied Petroleum Gas, Butylenes, Raffinate III (Butene-2), Spent Butene (SCRS)

Product/Substance Use:

- Butene-2 is sold from the NOVA Chemicals' Corunna, Ontario facility (St Clair River Site) into industrial gas processing markets.
- Butene-2 is also present in Joffre, Alberta's Crude Butadiene (Stabilized) product and Corunna, Ontario's Mixed C4 product.

Characteristics and Safe Handling:

- This material is regulated in the workplace. It is also regulated during transportation as a flammable gas.
- Butene-2 is a highly volatile, flammable gas, having a faint, sweet gasoline-like odor at normal temperatures. It is shipped and stored as a liquefied gas, under high pressure.
- Any equipment used in areas of handling or storage must be approved for flammable liquefied gas systems and properly grounded for control of static electricity.
- Areas surrounding a butene-2 release must be considered as immediate high risk for fire or explosion. Butene-2 is heavier than air and may collect to dangerous levels in low, underground or confined areas. Ignition from a distance with flashback is possible.
- **Do NOT attempt to extinguish a butene gas fire unless the leak source can be isolated and shut off.** Any release to water, air or land will immediately disperse into a highly flammable gas cloud that is easily ignited by heat, sparks, static charge or flames. Consider use of water spray or fog to disperse or divert released gas cloud.
- Risk of container or rail car explosion is extremely high when subjected to high heat or direct flames. Use large quantities of cold water to cool any fire-exposed containers or rail cars. Direct addition of water (or any other room temperature liquid) to the liquefied gas will cause flash vaporization resulting in an explosion (either immediately or delayed) known as a "boiling liquid, expanding vapor explosion" (BLEVE). Liquefied gas may explode on contact with hot water (45°C-75°C) (113°F-167°F).
- In the event of a large release or fire, evacuate personnel upwind to a safe distance of at least 0.8 to 1.6 kilometers (½ to 1 mile).
- Liquefied butene-2 cools its surroundings to extremely low temperatures as it vaporizes. Many materials may become brittle and may fail without warning when exposed to liquefied butene-2. If any safety equipment comes in contact with the liquefied butene-2, it must be inspected and retested for integrity or replaced.

Health and Safety Information:

- Wear thermal protective gloves and all recommended personal protective equipment if contact with these materials is possible. Care should be taken to avoid having the liquefied butene contact the skin or eyes as severe injury and frostbite can result. Thaw frostbitten skin gently in warm water. Do NOT rub or pull off adherent objects or clothing. Flush eyes with warm water. **Seek immediate medical attention.**
- **Ensure adequate ventilation is available.** Breathing butene-2 gas may cause nose and throat irritation, and at very high concentrations may cause headache, heart beat irregularities, light-headedness, drowsiness, dizziness and nausea. With extended contact (usually in an enclosed space), unconsciousness or death is possible due to low oxygen levels.
- Contact with gas may be mildly irritating to eyes and skin; **seek medical attention** if irritation persists.
- Wear fire-resistant or natural fiber clothing in areas where butene-2 releases can occur to reduce risk of possible build-up of static charge on synthetic fabrics.
- 1,3-butadiene, which can be present in the butene-2 product in low concentrations of up to 0.2%, has been classified as a carcinogen by the International Agency for Research on Cancer (IARC) and the U.S. Environmental Protection Agency (EPA). 1,3-butadiene has also been linked with reproductive effects in mice; however, the relevance of this to humans is not known.
- The American Conference of Governmental Industrial Hygienists (ACGIH) have adopted an 8-hour Time-Weighted Average value of 250 parts per million (ppm) for butenes.

Environmental Information:

- Butene-2 is highly volatile, and therefore has limited absorption into soil and sediment. Product is not considered harmful to aquatic life, and is not known to accumulate in plant or animal tissues.
- Butene-2 will degrade rapidly over time in air with a calculated half-life of 2.3 to 3 hours. Potential for mobility in soil and ground waters is considered to be low.
- Associated wastes may be ignitable and regulated in Canada and in the United States. Ensure all applicable regulations are met.

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For more information on this, or any other NOVA Chemicals' product, please contact us at the nearest location below during business hours or visit our website at www.novachemicals.com:

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