

## PRODUCT BACKGROUNDER

### Butadiene (C4) Products

**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: Mixed C4 Product (Corunna, Ontario), Crude Butadiene (Joffre, Alberta)

#### Product/Substance Use:

- These industrial products are manufactured at NOVA Chemicals' Corunna, Ontario and Joffre, Alberta facilities and are transported by pipeline and railcars.
- They are used as feedstock for industrial chemicals, plastics and rubber production.

#### Characteristics and Safe Handling:

- Products are regulated in the workplace. They are also regulated during transportation as flammable gases.
- The butadiene products are highly volatile, flammable gases having a faint, sweet gasoline-like odor at normal temperatures. Products are shipped and stored as a liquefied gas under 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. Equipment design and handling procedures should exclude oxygen to avoid possible explosive peroxide formation. The use of suitable inhibitors such as t-butyl catechol (TBC) or equivalent are required for transportation and are recommended if the storage system cannot be maintained free of oxygen.
- **Flammable Gas:** Any release to water, air or land will immediately disperse into a highly flammable gas cloud that is easily ignited by heat, sparks or flames. Areas surrounding a butadiene C4 product release pose an immediate high risk for fire or explosion and must be monitored, as ignition from a distance with flashback is possible.
- Vapors are heavier than air and may collect to dangerous levels in low, underground or confined areas.
- **Do NOT attempt to extinguish a butadiene C4 product gas fire unless the leak source can be isolated and shut off.**
- **Liquefied Gas:** Risk of explosion is extremely high when a container of liquefied gas is subjected to high heat or direct flames. Use large quantities of cold water to cool any fire-exposed containers.
- 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 butadiene C4 products cool their surroundings to extremely low temperatures as it vaporizes. Many materials may become brittle and fail without warning when exposed to these liquefied gases. If any safety equipment comes in contact with the liquefied butadiene C4 gases, 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 this material is possible. Care should be taken to avoid having the liquefied butadiene C4 products 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. **Seek immediate medical attention.**
- If eyes are contacted by the liquefied butadiene C4 products, **immediately flush with warm water and seek medical attention.** Contact with gas may be mildly irritating to eyes; **seek medical attention** if irritation persists.
- **Ensure adequate ventilation is available.** Breathing gas may cause nose and throat irritation, and at very high levels may cause headache, heart beat irregularities, light-headedness, drowsiness, dizziness and nausea. With extended contact (usually in an enclosed space) unconsciousness or death due to low oxygen levels is possible.
- Repeated inhalation exposures may result in lung, liver and kidney damage, including possible cancer. 1,3-butadiene 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.

#### Environmental Information:

- Butadiene C4 products are highly volatile, and therefore have limited absorption into soil and sediment. Products are considered moderately toxic to aquatic life, and are not known to accumulate in plant or animal tissues.
- Product components are expected to degrade rapidly in the environment, with no component persisting in the environment. The half-life of components ranges from a few hours for 1,3-butadiene and butenes to 48 hours for butane.
- Associated wastes may be flammable 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](http://www.novachemicals.com):

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