1. Product and Company Identification

Company
BASF Canada Inc.
100 Milverton Drive
Mississauga, ON L5R 4H1, CANADA

24 Hour Emergency Response Information
CANUTEC (reverse charges): (613) 996-6666
BASF HOTLINE: (800) 454-COPE (2673)

Chemical family: vinyl ether
Synonyms: Butylvinylether
Use: Chemical used in synthesis and/or formulation of industrial products.

2. Hazards Identification

Emergency overview
DANGER:
EXTREMELY FLAMMABLE.
Irritating to skin.
High concentrations in the air may cause narcosis.
Use with local exhaust ventilation.
Wear appropriate respiratory protection.
Avoid contact with the skin, eyes and clothing.

State of matter: liquid
Colour: colourless to yellow
Odour: ether-like

Potential health effects
Acute toxicity:
Virtually nontoxic after a single ingestion. Virtually nontoxic by inhalation. Of low toxicity after short-term skin contact. The inhalation of a highly enriched/saturated vapor-air-mixture represents a potential acute hazard. High concentrations in the air may cause narcosis.

Irritation / corrosion:
Skin contact causes irritation. Not irritating to the eyes.

Assessment other acute effects:
The available information is not sufficient for evaluation.

Sensitization:
No data available.

Chronic toxicity:
Genotoxicity: The substance was not mutagenic in bacteria.

Signs and symptoms of overexposure:
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further symptoms are possible

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Content (W/W)</th>
<th>Hazardous ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>111-34-2</td>
<td>&gt;= 60.0 - &lt;= 100.0 %</td>
<td>1-(ethenylx)-butane</td>
</tr>
</tbody>
</table>

4. First-Aid Measures

General advice:
Immediately remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention.

If on skin:
Wash thoroughly with soap and water.

If in eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open. If irritation develops, seek medical attention.

If swallowed:
Rinse mouth immediately and then drink plenty of water, seek medical attention.

Note to physician
Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Flash point: -6 °C (DIN 51755)
Autoignition: 190 °C (DIN 51794)
Lower explosion limit: 1.20 % (V) (-5 °C)
Upper explosion limit: 
Flammability: Highly flammable.
Self-ignition temperature: Not self-igniting

Suitable extinguishing media:
Water spray, dry powder, foam

Hazards during fire-fighting:
Nitrogen oxides, carbon oxides
The substances/groups of substances mentioned can be released in case of fire. Under certain conditions in case of fire other hazardous combustion products may be generated. Vapours may form explosive mixture with air.

Protective equipment for fire-fighting:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.
6. Accidental release measures

Personal precautions:
Breathing protection required. Avoid contact with the skin, eyes and clothing.

Environmental precautions:
Do not empty into drains.

Cleanup:
For large amounts: Pump off product.
For residues: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).
Dispose of absorbed material in accordance with regulations.

7. Handling and Storage

Handling
General advice:
Ensure thorough ventilation of stores and work areas. Protect from direct sunlight.

Protection against fire and explosion:
Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

Storage
General advice:
Keep at temperature not exceeding 25 °C. Keep container tightly closed and in a well-ventilated place.

Storage incompatibility:
General advice: Segregate from acids and acid forming substances.

Storage stability:
Storage temperature: <= 25 °C
Storage duration: 24 Months
The product is stabilized, the shelf life should be noted. From the data on storage duration in this safety data sheet no agreed statement regarding the warrantee of application properties can be deduced.

8. Exposure Controls and Personal Protection

Personal protective equipment

Respiratory protection:
Wear respiratory protection if ventilation is inadequate. Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e. g. EN 14387 Type A)

Hand protection:
Chemical resistant protective gloves (EN 374), Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374); fluororubber (FKM) - 0.7 mm coating thickness, Manufacturer's directions for use should be observed because of great diversity of types., Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.
Chemical resistant protective gloves

Eye protection:
Safety glasses with side-shields (frame goggles) (e.g. EN 166)
Tightly fitting safety goggles (chemical goggles).

Body protection:
Impermeable protective clothing

General safety and hygiene measures:
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with the skin, eyes and clothing. Avoid inhalation of vapour. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Wear protective clothing as necessary to prevent contact. Avoid contact with the skin, eyes and clothing.

9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>ether-like</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available.</td>
</tr>
<tr>
<td>Colour</td>
<td>colourless to yellow</td>
</tr>
<tr>
<td>pH value</td>
<td>7.0</td>
</tr>
<tr>
<td>Melting point</td>
<td>-113 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>94 °C (1,013 hPa)</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>51 mbar (20 °C)</td>
</tr>
<tr>
<td>Density</td>
<td>208 mbar (50 °C)</td>
</tr>
<tr>
<td>Partitioning coefficient n-octanol/water (log Pow)</td>
<td>3.15 (approx. 25 °C) (Directive 92/69/EEC, A.8)</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>0.43 mPa.s (20 °C)</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>(25 °C) sparingly soluble</td>
</tr>
<tr>
<td>Molar mass</td>
<td>100.16 g/mol</td>
</tr>
</tbody>
</table>

10. Stability and Reactivity

Conditions to avoid:
Avoid all sources of ignition: heat, sparks, open flame. Avoid direct sunlight. Avoid heat.

Substances to avoid:
acids, substances with an acid reaction, atmospheric oxygen

Hazardous reactions:
The product is stabilized for transport.
The product can polymerize if the shelf life or storage temperature are greatly exceeded. Polymerization occurs with acids. Polymerization coupled with heat formation. Strong exothermic reaction with acids. The product/the substance has a tendency towards the formation of peroxide. May form unstable peroxides.

Decomposition products:
Heated product evolves combustible vapours.
acetaldehyde, The substances/groups of substances mentioned may be released upon the reaction with water.

Thermal decomposition:
240 °C (DTA)
First exothermic reaction at indicated temperature.

Corrosion to metals:
Not corrosive to: steel
11. Toxicological information

Acute toxicity

**Oral:**
Type of value: LD50  
Species: rat  
Value: 10,000 mg/kg  
Literature data.

**Inhalation:**
Type of value: LC50  
Species: rat  
Exposure time: 4 h  
Literature data.

Inhalation-risk test (IRT): No mortality within 2 minutes as shown in animal studies. Deaths possible with prolonged exposure. Literature data.

**Dermal:**
Type of value: LD50  
Species: rabbit  
Value: approx. 3,300 mg/kg  
Literature data.

**Irritation / corrosion**

**Skin:**
Species: rabbit  
Result: Irritant.  
Method: OECD Guideline 404

**Eye:**
Species: rabbit  
Result: non-irritant  
Method: OECD Guideline 405

**Aspiration Hazard:**
No aspiration hazard expected.

**Experiences in humans:**
High concentrations have a narcotizing effect.

12. Ecological Information

**Fish**

Acute:
OECD Guideline 203 Brachydanio rerio/LC50 (96 h): 28.3 mg/l  
The statement of the toxic effect relates to the analytically determined concentration. The product is highly volatile. Tested in a closed test system. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.
OECD Guideline 203 Brachydanio rerio/LC50 (96 h): approx. 1,000 mg/l  
The details of the toxic effect relate to the nominal concentration.

**Aquatic invertebrates**

Acute:
OECD Guideline 202, part 1 Daphnia magna/EC50 (48 h): 46.3 mg/l
The statement of the toxic effect relates to the analytically determined concentration. The product is highly volatile. Tested in a closed test system. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Aquatic plants

Toxicity to aquatic plants:
OECD Guideline 201 static
green algae/EC50 (72 h): 45.9 mg/l
The statement of the toxic effect relates to the analytically determined concentration. The product is highly volatile. Tested in a closed test system. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

OECD Guideline 201 static
green algae/EC10 (72 h): 14 mg/l
The statement of the toxic effect relates to the analytically determined concentration. The product is highly volatile. Tested in a closed test system. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Microorganisms

Toxicity to microorganisms:
DIN 38412 Part 8 bacterium/EC50 (16 h):  > 8,000 mg/l
The details of the toxic effect relate to the nominal concentration. The product has low solubility in the test medium. An eluate has been tested.

OECD Guideline 209 activated sludge, industrial/EC20 (30 min):  > 1,000 mg/l
Nominal concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Degradability / Persistence

Biological / Abiological Degradation

Test method: OECD 301D; EEC 92/69, C.4-E
Method of analysis: BOD of the ThOD
Degree of elimination:  > 40 %
Evaluation: References to biodegradation processes are available.
          The product is highly volatile and can be eliminated from water by stripping.

Bioaccumulation

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Environmental mobility:
Transport between environmental compartments:
calculated Volatility/water - air

13. Disposal considerations

Waste disposal of substance:
Incinerate in suitable incineration plant, observing local authority regulations. A waste code in accordance with the European waste catalog (EWC) cannot be specified, due to dependence on the usage. The waste code in accordance with the European waste catalog (EWC) must be specified in cooperation with disposal agency/manufacturer/authorities.

Container disposal:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.
14. Transport Information

Land transport
TDG
Hazard class: 3
Packing group: II
ID number: UN 2352
Hazard label: 3
Proper shipping name: BUTYL VINYL ETHER, STABILIZED

Sea transport
IMDG
Hazard class: 3
Packing group: II
ID number: UN 2352
Hazard label: 3
Marine pollutant: NO
Proper shipping name: BUTYL VINYL ETHER, STABILIZED

Air transport
IATA/ICAO
Hazard class: 3
Packing group: II
ID number: UN 2352
Hazard label: 3
Proper shipping name: BUTYL VINYL ETHER, STABILIZED

15. Regulatory Information

Federal Regulations

Registration status:
Chemical DSL, CA released / listed

WHMIS classification: B2: Flammable Liquid
D2B: Materials Causing Other Toxic Effects - Toxic material

THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CPR AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED BY THE CPR.

16. Other Information
We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

SDS Prepared by:
BASF NA Product Regulations

BASF HOTLINE (800) 454 – COPE (2673)
SDS Prepared on: 2014/07/10

END OF DATA SHEET