

SAFETY DATA SHEET

1. Identification of substance

- * Product name: (E)-4-Bromo-2-butenoyl Chloride
- * Chemical ID: SY263119
- * Manufacturer/Supplier:
 - Accela ChemBio Inc. 9883 Pacific Heights Blvd, Suite H, San Diego CA 92121, USA;
 - Accela ChemBio Co.,Ltd. 222 Guangan Road, No. 21, Pudong New Area, Shanghai, 201318, China;
 - Emergency Phone: (858) 699 3322, +86 (21) 5079 5510
- * Information Department: Health, Safety and Environmental Department
- * Emergency information: During normal hours the Health, Safety and Environmental Department. After normal hours call **Chemtrec** at (800) 424-9300.

2. Hazards identification

- * **According to Regulation (EC) No 1272/2008 [EU-GHS/CLP]**
 - * **Pictogram:** No data known
 - * **Signal word:** No data known
 - * **Hazard statement(s):** No data known
 - * **Precautionary statement(s):** No data known
 - * **Supplemental Hazard:** no data known
- * **According to EU Directives 67/548/EEC or 1999/45/EC**
 - * **Hazard symbols:** No data known
 - * **Risk phrases:** No data known
 - * **Safety phrases:** No data known
- * **Other Hazards**
no data known.

3. Composition/information on ingredients

- * Chemical characterization-Description(CAS#): (E)-4-Bromo-2-butenoyl Chloride (CAS# 99083-25-7); >95%

4. First aid measures

- * **Description of first aid measures**
 - * General information
Immediately remove any clothing soiled by the product.
 - * After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.
 - * After skin contact
Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.
 - * After eye contact
Rinse opened eye for several minutes under running water. Then consult a doctor.
 - * After swallowing
Seek immediate medical advice.
- * **Most important symptoms and effects, both acute and delayed**
no data available
- * **Indication of any immediate medical attention and special treatment needed**
no data available

5. Fire fighting measures

- * **Extinguishing media**
 - * Suitable extinguishing agents
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- * **Special hazards arising from the substance or mixture**
Carbon monoxide and carbon dioxide, Hydrogen bromide (HBr), Hydrogen chloride (HCl), .

* **Advice for firefighters**

Protective equipment: Wear self-contained respirator. Wear fully protective impervious suit.

6. Accidental release measures

* **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation.

* **Environmental precautions**

Do not allow material to be released to the environment without proper governmental permits.

* **Methods and materials for containment and cleaning up**

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

* **Reference to other sections**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7. Handling and storage

* **Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. Ensure good ventilation at the workplace.

* **Conditions for safe storage, including any incompatibilities**

Keep container tightly sealed. Store in a dry, cool and well-ventilated place.

Recommended storage temperature: -20°C.

Store under inert gas.

Light sensitive

* **Specific end use(s)**

no data available

8. Exposure controls/personal protection

* Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

* **Control parameters**

* Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

* Additional information: no data known

* **Exposure controls**

* Personal protective equipment

* General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

* Breathing equipment: Use suitable respirator when high concentrations are present.

* Protection of hands: Impervious gloves

* Eye protection: Safety glasses

* Body protection: Protective work clothing.

9. Physical and chemical properties

* **Information on basic physical and chemical properties**

* Form: Liquid

* Color: Colorless to yellow

* Odor: Not determined

* Melting point/Melting range(°C): Not determined

* Boiling point/Boiling range(°C): Not determined

- * Sublimation temperature/start: Not determined
- * Flash point: Not determined
- * Ignition temperature: Not determined
- * Decomposition temperature: Not determined
- * Danger of explosion: Not determined
- * Explosion limits: Not determined
- * Vapor pressure: Not determined
- * Density: Not determined
- * **Other safety information**
no data available

10. Stability and reactivity

- * **Reactivity**
no data known
- * **Chemical stability**
Stable under recommended storage conditions.
- * **Possibility of hazardous reactions:** No dangerous reactions known.
- * **Conditions to avoid:** no data known
- * **Incompatible materials:** no data known
- * **Hazardous decomposition products**
Other decomposition products - no data known

11. Toxicological information

- * **Information on toxicological effects**
- * Acute toxicity: no data known
- * Primary irritant effect:
 - * on the skin: maybe irritant to skin
 - * on the eye: maybe irritating effect
- * Sensitization: No sensitizing effects known.
- * Subacute to chronic toxicity:
Other than potential irritation (see above), no information on illness or injury to humans from acute or chronic exposure to this product is available.
- * Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12. Ecological information:

- * **Toxicity:** no data known
- * **Persistence and degradability:** no data known
- * **Bioaccumulative potential:** no data known
- * **Mobility in soil:** no data known
- * **Results of PBT and vPvB assessment:**
no data known
- * **Other adverse effects:** no data known

13. Disposal considerations

- * **Waste treatment methods**
- * Product Recommendation
Consult state, local or national regulations to ensure proper disposal.
- * Uncleaned packagings Recommendation:
Disposal must be made according to official regulations.

14. Transport information

- * **UN number**
DOT, ADR, IMDG, IATA: No data known
- * **UN proper shipping name**
DOT, ADR, IMDG, IATA: No data known

- * **Transport hazard class(es)**
DOT, ADR, IMDG, IATA Class: No data known
- * **Packaging group**
DOT, ADR, IMDG, IATA: No data known
- * **Environmental hazards:** no data known
- * **Special precautions for user:** no data known

15. Regulatory information

- * **Safety, health and environmental regulations/legislation specific for the substance or mixture**
Adhere to all Federal, State and local regulations.
Information about limitation of use: Use of this product is restricted to research and development only by technically qualified individuals.
- * **Chemical Safety Assessment**
For this product a chemical safety assessment was not carried out

16. Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

- * Department issuing MSDS: Health, Safety and Environmental Department.
- * Contact: Darrell R. Sanders

Notice to Reader

Accela ChemBio supplied chemicals are for research purposes only and are NOT intended for use as drug, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation which age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles and clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.