

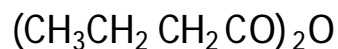
Product Description and Handling Guide n-Butyric Anhydride

n-Butyric Anhydride

n-Butanoic acid anhydride

CAS no. 106-31-0

EC no. 203-383-4



Product description

n-Butyric Anhydride is a clear, colorless liquid with an unpleasant, pungent odor. It is miscible in any proportion with most organic solvents. The product hydrates with water and decomposes with alcohol.

Possible applications

n-Butyric Anhydride may be used as an acylating agent, e.g. in the production of dyes, aromas and agrochemicals.

It may also be used in the production of cellulose butyrate and cellulose aceto-butyrate.

Characteristic data

<i>Typical Properties</i>	<i>Unit</i>	
Molar mass	g/mol	158.2
Boiling point at 1013 hPa	°C	198
Melting temperature	°C	-75
Density at 20 °C (DIN 51 757)	g/cm ³	0.966 – 0.967
Refractive index n _D at 20 °C (DIN 51 423, part 2)		1.413 – 1.415
Viscosity at 20 °C	mPa · s	1.7
Vapour pressure at 20 °C	mbar	0.4
Vapour density (Air=1)		5.4
Solubility in water		hydrolyses

These characteristic data are intended for the purpose of product description and are not the subject of continuous monitoring.

Further physical properties and characteristic data as well as information on safety and handling are listed in the material safety data sheet and the sales specifications. Please consult www.celanese.com

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Storage

Recommended Blanketing	Dry Air ^{1,2} or Dry Nitrogen ^{1,2,3}
Recommended Temperature	
Maximum	100 °F (37.8 °C)
Minimum	0 °F (-17.8 °C)
Recommended pressure	Atmospheric
Bulk Quantities	Outside, detached tanks
Small Containers	Cool, dry, well ventilated area

Handling

- Thoroughly review Material Safety Data Sheet before handling product.
- Keep containers closed when not in use.
- Open containers slowly to allow any excess pressure to vent.
- Keep away from heat, sparks, flame or other sources of ignition.
- Protect small containers from physical damage.
- Use proper electrical grounding and bonding procedures when loading, unloading and transferring¹.
- Refer to the Material Safety Data Sheet for more information on materials to avoid.
- Use spark-resistant tools.
- Electrical equipment and circuits in all storage and handling areas must conform to requirements of national electrical code (Articles 500 and 501) for hazardous location.

1. Refer to NFPA #77 “Static Electricity” for proper electrical grounding procedures.
2. See the National Fire Protection Agency (NFPA) #30 “Flammable and Combustible Liquids Code” and consult with qualified fire protection specialists to determine specific storage tank design requirements.
3. Blanketing may be used to retain quality in long-term storage conditions.

n-Butyric Anhydride is available from Celanese Chemicals as bulk material.

Shelf life

The shelf life of n-Butyric Anhydride is one year.

The shelf life dates from the day of packaging, for bulk deliveries this is the day of loading. This period is in general applicable to material stored under conditions recommended by Celanese Chemicals.

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Materials for storage and transport

Unit / element	Recommendation	Permissible
Tank	Stainless Steel ¹	Aluminum ^{2,4}
Piping	Stainless Steel ¹	Aluminum ^{2,4}
Valves	Stainless Steel ¹	Aluminum ^{2,4}
Pumps	Stainless Steel ¹	–
Relief Valves	Stainless Steel ¹	–
Gaskets	PTFE ⁵	Butyl Rubber
Pump Seals	Single Mechanical Seal: Stainless Steel / Hastelloy C-276 metallic components, Kalrez O-rings	–
Valve Packing	PTFE ⁵	–
Pipe End Connections	Welded and flanged system	Threaded with PTFE ⁵ tape thread lubricant
Heat Exchanger	Product side: Stainless Steel ¹	–
Hoses	Stainless Steel ¹	–
Tank Truck	Stainless Steel ¹	Aluminum ^{2,4}
Tank Car	Stainless Steel ¹	Aluminum ^{2,4} Lined Carbon Steel ³
Barge	Stainless Steel ¹	–
Ship Tank	Stainless Steel ¹	–

1. Type 304 or 316 Stainless Steel
2. Type 3000, 5000, and 6000 series Aluminum when the temperature does not exceed 120 °F (49 °C)
3. Lining refers to high baked phenolic resin
4. May be used if no moisture is present
5. Polytetrafluoroethylene

For further information on safety and handling, please use the following link: <http://www.celanese.com/msds/>

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Other Product Information:

The following statements about n-Butyric Anhydride manufactured at Celanese are based to the best of our manufacturing and process knowledge. The practice of providing this information to customers is for their convenience. It does not alter the terms and conditions of sale, including any warranties or limitations on liability, applicable to the underlying commercial transaction involving the product to which this certification applies. We believe this information to be accurate and reliable, but customers should make their own determination on the suitability of this product for a particular application.

Chemical Inventory Status

The substance is listed in the following chemical inventories:

<i>Chemical Inventory Status</i>	<i>Listed</i>	<i>Comment</i>
AICS (Australia)	X	
DSL (Canada)	X	
NDSL (Canada)		
IECSC (China)	X	
EINECS (Europe)	X	EC-No.: 203-383-4
ELINCS (Europe)		
ENCS (Japan)	X	Japanese ENCS Number (2)-627
ISHL (Japan)	X	Japanese ISHL Number (2)-627
NZIoC (New Zealand)	X	
PICCS (Philippines)	X	
TSCA (USA)	X	

REACH

REACH (“Registration, Evaluation, Authorization and Restriction of Chemicals”)

Celanese is aware of the obligations imposed by the European Union legislation REACH on EU manufacturers and importers as well as on downstream users. We are obliged to comply with the requirements of the REACH legislation relating to our European manufacturing facilities, our own imports as well as our obligations as a downstream user in the European chemical industry. Should you require additional information, please contact Celanese at REACH@celanese.com

Registration number

Celanese Chemicals Europe GmbH is not required to register this product by the first REACH date

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Animal Origin, Genetically Modified Organisms

BSE/TSE Statement

To the best of our knowledge n-Butyric Anhydride and the raw materials used in the production of this material are not derived from human or animal origin.

Genetically Modified Organisms

To the best of our knowledge this product is not based on raw materials obtained through genetically modified organisms. GMOs and biotechnical means are not used during the manufacturing process.

Allergens Guide

Celanese Acetyl Intermediates does not use any ingredients of animal or plant origin in the manufacture of n-Butyric Anhydride (CAS no. 106-31-0). Therefore, we can certify that the supplied n-Butyric Anhydride does not contain any of the eight main food allergens (peanuts, tree nuts, fish, shellfish, eggs, milk, soy, and wheat). n-Butyric Anhydride is manufactured through an entirely synthetic process and will not contain any gluten. No nutritional data is available for n-Butyric Anhydride.

Kosher

n-Butyric Anhydride manufactured by Celanese is Kosher certified. Certificate is available on request.

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The information contained in this publication is based on our present state of knowledge and is intended to provide general notes on our products and their uses. It should not be construed as promising or guaranteeing specific properties of the products described or their suitability for a particular application. User is solely responsible for determining the suitability of the products for the intended purpose. To the best of our knowledge the information in this publication is accurate; however we do not assume any liability whatsoever for the accuracy and completeness of such information. We strongly recommend that users seek and adhere to our current instructions for handling these products, and to entrust the handling of such products to adequately trained personnel only. Please adhere to the instructions and information contained in the corresponding Material Safety Data Sheets (MSDS) before attempting to process our products. Any existing industrial property rights must be observed. User is solely responsible for investigating and checking the regulatory approval status. The quality of our products is guaranteed under our General Conditions of Sale.

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