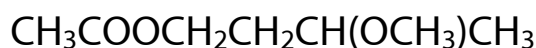


## Product Description and Handling Guide

### Butoxyl®

### Butoxyl®



Acetic acid (3-methoxy-n-butyl) ester

**3-Methoxy-1-butyl acetate**

CAS no. 4435-53-4

EC no. 224-644-9

#### *Product description*

Butoxyl® is a neutral colorless liquid with a faint odor. It is miscible with the common organic solvents; its solubility in water is very low. Butoxyl® contains no ethanol and meets the requirements of DIN 53 246 (esters of acetic acid).

#### *Dissolving power:*

The following substances are freely soluble in Butoxyl®: rosin, glycerol resin esters, mastic, chlorinated rubber, cellulose ethers (ethyl and benzyl cellulose), nitric acid esters of cellulose (nitrocellulose, celluloid), butyric acid esters of cellulose (cellulose acetate butyrate), polystyrene (coatings), vinyl chloride/vinyl isobutyl ether copolymers, vinyl chloride/vinyl acetate copolymers, vinyl chloride/vinyl propionate copolymers, polyvinyl ethyl ethers, polyvinyl butyral, highly acetalized, polyvinyl acetate, methacrylates, aromatic-formaldehyde resins, ketone resins, phenol-formaldehyde resin, rosin-modified phenolic resins, carbamic acid ester resins, urea-formaldehyde resins, melamine resins, alkyd resins, Soft Resin KTN, chlorodiphenyl resins, epoxy resins, chlorinated polypropylene, heavy machine oil, linseed oil, linseed-stand oil, castor oil, wood oil, spindle oil, dioctylphthalate, tricresyl phthalate (TCP), tris-2-chloroethyl phosphate and phthalic acid polyglycol esters. Coumarone resins, polyvinyl chloride (postchlorinated) and waxes are freely soluble only if heated.

#### *The following substances are sparingly soluble:*

bitumes, coaltar pitch, acaroid resin, unplasticized resols; natural rubber, acetic acid esters of cellulose (acetyl cellulose) and polyvinyl chloride (PVC) may swell in Butoxyl®.

#### *The following substances are insoluble:*

dammar, shellac, neoprene, polyisobutylene, polyvinyl butyral (low degree of acetalization), polyvinyl alcohol, polyvinyl carbazoles, polyethylene, polypropylene grades, polytrifluoromonochloroethylene, polytetrafluoroethylene, polyamides, polyterephthalic acid glycol ester, polyacrylonitrile and polyacetals.

#### *Possible applications*

Because of its faint odor and excellent dilutability with ethanol and hydrocarbons, Butoxyl® is highly suitable for brush-applied paints. It prevents the familiar blushing or milky opalescence of the drying paint films caused by thinners even when used in fairly large amounts.

Butoxyl® in combination with ethanol does not attack rubber and can therefore also be used for paints applied by machine (rubber rollers). An addition of Butoxyl® gives spray paints a smooth surface and high gloss even when ester resins and oxidatively curing resins are used. Because of its low volatility it is best added to spray paints in amounts of no more than 5 – 10 %. Butoxyl®

## Product Description and Handling Guide

### Butoxyl®

brings great advantages when used in stoving enamels because of its low volatility, promoting flow and gloss of the paint films.

Butoxyl® can be used as a solvent in isocyanate and epoxy containing systems. In high-solids paints Butoxyl® can be employed as a solvent to lower the viscosity.

#### Characteristic data

<i>Typical Properties</i>	<i>Unit</i>	
Molar mass	g/mol	146.19
Boiling point at 1013 hPa	°C	170
Melting temperature	°C	< -20
Density at 20 °C (DIN 51 757, method D)	g/cm <sup>3</sup>	0.954 – 0.956
Refractive index $n_D$ at 20 °C (DIN 51 423, part 2)		1.408 – 1.410
Viscosity at 20 °C (calc)	mPa · s	0.71
Water solubility at 25 °C	g/l	60,68
Water absorption at 20 °C	% (w/w)	4
Vapour pressure at 20 °C	mbar	0.34
Vapour density (Air = 1)		5.05
Specific heat at 20 °C	kJ/kg · K	1.93
Heat of vaporization at 1013 hPa	J/g	318.4
Dielectric constant at 20 °C		8.0
Specific electrical conductivity at 20 °C	S · cm <sup>-1</sup>	approx. $0.8 \cdot 10^{-8}$
Evaporation number (DIN 53 170, diethyl ether = 1)		75

*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](http://www.celanese.com)*

#### Shelf life

The shelf life of Butoxyl® is six months.

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.

Butoxyl® stabilized with BHT is available by Celanese. The shelf life of the BHT stabilized Butoxyl® is one year.

## Product Description and Handling Guide

### Butoxyl<sup>®</sup>

#### *Storage*

Recommended Blanketing	Dry Nitrogen <sup>1,2,3</sup>
Recommended Temperature	
Maximum	100 °F (37.8 °C)
Minimum	65 °F (18.3 °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 transferring<sup>1</sup>.
- 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.

Butoxyl<sup>®</sup> is available from Celanese as bulk material.

## Product Description and Handling Guide

### Butoxyl®

#### *Materials for storage and transport*

Unit / element	Recommendation	Permissible
Tank	Carbon Steel (rust free)	Stainless Steel <sup>1</sup> , Aluminum <sup>2</sup> Lined Carbon Steel <sup>4</sup>
Piping	Carbon Steel	Stainless Steel <sup>1</sup> , Aluminum <sup>2</sup>
Valves	Carbon Steel	Stainless Steel <sup>1</sup>
Pumps	Cast Iron, Carbon Steel	Stainless Steel <sup>1</sup>
Relief Valves	Carbon Steel	Stainless Steel <sup>1</sup>
Gaskets	Glass filled PTFE <sup>3</sup>	PTFE <sup>3</sup>
Pump Seals	Single Mechanical Seal: Stainless Steel / Hastelloy C-276 metallic components, Kalrez O-rings	–
Valve Packing	PTFE <sup>3</sup>	Braided PTFE <sup>3</sup>
Pipe End Connections	Welded and flanged system	Threaded with PTFE <sup>3</sup> tape
Heat Exchanger	Product side: Stainless Steel <sup>1</sup>	Product Side: Carbon Steel
Hoses	Stainless Steel <sup>1</sup>	Aluminum <sup>2</sup>
Tank Truck	Stainless Steel <sup>1</sup>	Aluminum <sup>2</sup>
Tank Car	Carbon Steel	Stainless Steel <sup>1</sup> , Aluminum <sup>2</sup>
Barge	Carbon Steel	Stainless Steel <sup>1</sup>
Ship Tank	Stainless Steel <sup>1</sup>	–

1. Type 304 or 316 Stainless Steel
2. Type 3000, 5000, and 6000 series Aluminum
3. Polytetrafluoroethylene
4. Lining refers to high baked phenolic resin

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

#### **Guidelines**

##### **Allergens Guide**

Celanese does not use any ingredients of animal or plant origin in the manufacture of Butoxyl® (CAS no. 4435-53-4). Therefore, we can certify that the supplied Butoxyl® does not contain any of the eight main food allergens (peanuts, tree nuts, fish, shellfish, eggs, milk, soy, and wheat). Butoxyl® is manufactured through an entirely synthetic process and will not contain any gluten. No nutritional data is available for Butoxyl®.

## Product Description and Handling Guide

### Butoxyl®

#### *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.: 224-644-9
ELINCS (Europe)		
ENCS (Japan)	X	Japanese ENCS Number (2)-739
ISHL (Japan)	X	Japanese ISHL Number (2)-739
KECI (Korea)	X	Korean ID Number: KE-23237
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](mailto:REACH@celanese.com)

The product is to be regarded as a substance and has been registered.

Chemical name: 3-Methoxybutyl acetate

CAS number: 4435-53-4

EINECS number: 224-644-9

Registration number

Celanese Production Germany GmbH & Co. KG 01-2119548364-36-0000

#### **Animal Origin, Genetically Modified Organisms**

##### *BSE/TSE Statement*

To the best of our knowledge Butoxyl® 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.

## Product Description and Handling Guide

### Butoxyl®

#### Contact Information:

##### Asia:

**Celanese (China) Holding Co., Ltd**

4560 Jinke Road  
Zhang Jiang, Pudong New Area  
Shanghai 201203  
China

Tel: +86-21-38619288

Fax: +86-21-38619599

**Celanese Pte. Ltd:**

10 Hoe Chiang Road, #07-05/06  
Keppel Towers  
Singapore 089315

Tel: +65-6513-0443

Fax: +65-6227-8397

##### Europe:

**Celanese Sales Germany GmbH**

Am Unisys-Park 1  
65843 Sulzbach (Taunus)  
Deutschland / Germany

**Reception:**

Tel: +49 69 45009 0

Fax: +49 69 45009 50000

**Sales & Commercial:**

Tel: +49 69 45009 1485

Fax: +49 69 45009 1793

##### Americas:

**Celanese Corporation**

225 E. John Carpenter Fwy., Suite  
1200

Irving, Texas 75062

USA

Tel: 1-972-443-4016

[www.celanese.com/intermediate-chemistry](http://www.celanese.com/intermediate-chemistry)

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.