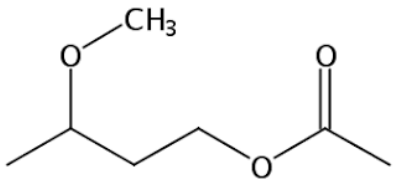
Butoxyl®
Product Quality, Regulatory & Technical Information Package
June 2025

Product Name:	**Butoxyl®**
Chemical Name:	3-Methoxybutyl acetate
CAS number:	4435-53-4
Celanese (bulk) Material number:	50000872



The Product is also available from Celanese as packed goods in IBC and drums, and as BHT stabilized grade.

Disclaimer

Celanese is supplying Butoxyl® as a technical grade product.

This document provides information about technical grade Butoxyl® ("Product") produced by Celanese and its affiliates ("Celanese" or "we"). The information presented in this document is based on our present state of knowledge and is intended to provide general notes on the Product and its intended uses. It does not constitute a guarantee of any specific properties of the Products described herein or its suitability for a particular application. The customer must make the sole determination whether the Product is suitable for the desired use. Celanese undertakes no obligation to update the information in this document.

The practice of providing this information to customers is for their convenience and is not legally binding. It does not alter the terms and conditions of sale, including without limitation, any limits of liability, applicable to the underlying commercial transaction involving the Product(s) to which this information applies. The Information is intended for use by persons having skill with respect to the subject matter involved.

Celanese makes no warranties, express or implied, and assumes no liability for the accuracy or completeness or in connection with any use of this information. Nothing herein is intended as a license to operate under or a recommendation to infringe any patents.

General

Further literature to the Product, such as Safety Data Sheet, Brochures and Specifications can be retrieved from Celanese website www.celanese.com.

Table of Contents

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, triscresyl 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.

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® 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.

Physical properties

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 safety data sheet and the sales specifications. Please consult www.celanese.com.

Property		Metric Units	English Units
Boiling Point @ 101.3 kPa (14.69 psi)		170 °C	338 °F
Density @ 20 °C (68 °F) (DIN 51 757, method D)		0.954 – 0.956 g/cm³	7.96 – 7.98 lb/gal
Dielectric constant @ 20 °C (68 °F)		8.0	
Evaporation number (DIN 53 170, diethylether = 1)		75	
Heat of Vaporization @ 101.3 kPa (14.69 psi)		318.4 J/g	136.9 Btu/lb_m
Melting Point		< - 20 °C	< - 4 °F
Molar Mass		146.19 g/mole	
Refractive Index n_D^{20} (68 °F) (DIN 51 423, part 2)		1.408 – 1.410	
Solubility in Water @ 25 °C (77 °F)		60.68 g/l	
Specific electrical conductivity @ 20 °C (68 °F)		approx. $0.8 \cdot 10^{-8}$	
Specific heat @ 20 °C (68 °F)		1.93 kJ/(kg·K)	0.461 Btu/(lb_m·°F)
Vapor Density (Air = 1)		5.05	
Vapor pressure	@ 20 °C (68 °F)	0.34 hPa	0.0049 psi
	@ 50 °C (122 °F)	5.0 hPa	0.073 psi
Viscosity @ 20 °C (68 °F), calculated		0.71 mPa · s	
Water absorption @ 20 °C (68 °F)		4 % (w/w)	

Storage and Handling Recommendations

Storage

Recommended Blanketing	Dry Nitrogen [a, b, c]	
Recommended Temperature		
Maximum	37.8 °C	(100 °F)
Minimum	0 °C	(32 °F)
Recommended pressure	Atmospheric	
Bulk Quantities	Outside, detached tanks	
Small Containers	Cool, dry, well ventilated area	

a. Refer to National Fire Protection Agency (NFPA) #77 "Static Electricity" or the respective national technical code for proper electrical grounding procedures.
b. See the National Fire Protection Agency (NFPA) #30 "Flammable and Combustible Liquids Code" or the respective national technical code and consult with qualified fire protection specialists to determine specific storage tank design requirements.
c. Blanketing may be used to retain quality in long-term storage conditions.

Handling

- Thoroughly review 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. Refer to the National Fire Protection Agency (NFPA) #77 "Recommended Practice for Static Electricity" or the respective national technical code for proper electrical grounding procedures.
- 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) or the respective national technical code for hazardous location.
- For further information on safety and handling, please use the following link: https://www.celanese.com/sds-search

Materials of Construction

Unit / element	Acceptable Material	Alternate Material
Tank	Carbon Steel (rust free)	Stainless Steel [a] Lined Carbon Steel [b] Aluminum [c]
Piping	Carbon Steel	Stainless Steel [a] Aluminum [c]
Valves	Carbon Steel	Stainless Steel [a]
Pumps	Cast Iron Carbon Steel	Stainless Steel [a]
Relief Valves	Carbon Steel	Stainless Steel [a]
Gaskets	Glass filled PTFE [d]	PTFE [d]
Pump Seals	Single Mechanical Seal: Stainless Steel / Hastelloy C-276 metallic components, Kalrez O-rings	–
Valve Packing	PTFE [d]	Braided PTFE [d]
Pipe End Connections	Welded and flanged system	Threaded with PTFE [d] tape
Heat Exchanger	Product side: Stainless Steel [a]	Product side: Carbon Steel
Hoses	Stainless Steel [a]	Aluminum [c]
Tank Truck	Stainless Steel [a]	Aluminum [c]
Tank Car	Carbon Steel	Stainless Steel [a] Aluminum [c]
Barge	Carbon Steel	Stainless Steel [a]
Ship Tank	Stainless Steel [a]	–

a. Type 304 or 316 Stainless Steel
b. Lining refers to high baked phenolic resin
c. Type 3000, 5000 and 6000 series Aluminum
d. Polytetrafluoroethylene

Product Quality Statements

Manufacturing Locations

The Product is produced at manufacturing location in Frankfurt (Germany).

- Industrial Park Frankfurt-Hoechst
  Brueningstr. 50
  65926 Frankfurt
  Germany

ISO Certification

The Product is a technical grade material produced under ISO 9001 rules. Certificates are available at Celanese web page (Select Filter "Intermediate Chemistry" and additional filters to retrieve the Certificate from the respective Manufacturing site):
https://www.celanese.com/certificate-search

Specification

The Product is supplied according to Celanese Sales Specification. A copy of the Sales Specification is attached to this dossier.

1. Celanese has a product traceability and withdrawal/recall program in place which we believe is appropriate for technical grade products.
2. The Product is not manufactured under GMP rules.
3. Celanese makes no nutrition statement.
4. There is no food or pharmaceutical grade hazard assessment program available for the Product.

Analytical Methods

Applied analytical methods according to the sales specifications provided as attachment.

Specifications	Analytical Methods [1]
3-Methoxybutyl Acetate	DIN 51 405 (GC)
3-Methoxybutanol	DIN 51 405 (GC)
Water	DIN 51 777 / ASTM D 1364 (mod. Karl-Fischer-Method)
Acid Number	DIN EN ISO 2114 / ASTM D 1613
Color	DIN EN 1557 / DIN ISO 6271 / ASTM D 1209 / ASTM 5386
Evaporation Residue	DIN 53 172
Density at 20 °C	DIN 51 757 Method D
Appearance	Visual Examination

[1] Alternative equivalent methods can be used at Celanese Terminals.

Manufacturing Process & Raw Materials

The Product is chemically synthesized through the esterification of 3-Methoxybutanol with Acetic Acid in a non-continuous process in the presence of a catalyst and final purifying step using a distillation process.

3-Methoxybutanol + Acetic Acid → Butoxyl® + Water

Celanese does not use raw materials of animal origin. During the manufacturing process, the material does not come into contact with materials of animal origin.

No metal, metal-organic or biological/protein based catalysts are being used in the production or purification of the Product.

Raw materials are mainly from fossil origin from national wide pipeline networks that might contain trace amounts of bio-content, independent of any Celanese activity. Because of the multiple reaction and purification steps along the value chain to produce Celanese's products, we believe that the quality properties are not influenced by the bio-content feedstock.

Shelf Life

The shelf life of the Product is six months.
Celanese also offers the Product stabilized with BHT. The shelf life of the BHT stabilized Product is one year.

The shelf life dates from the date of packaging, and for bulk deliveries this is the date of loading. This period is in general applicable to material

- packaged in discrete containers such as drums or bulk containers and
- stored under conditions recommended by Celanese.

For the Product this entails storage at ambient temperatures in tightly sealed, undamaged containers in a cool and well-ventilated place under dry nitrogen blanket. Blanketing may be used to retain quality in long term storage conditions, especially to prevent access of humidity.

Most products will have a longer useful life, but should be examined by the owner at its sole responsibility at the end of the recommended storage life to determine purity and condition of product. Bulk storage life, under recommended storage conditions, may be longer if the Product is routinely monitored for specific indications of the condition of the material, or if the Product in the tank is removed and replenished with fresh material on a routine basis. Any use of the Product after expiration of the shelf life is the sole responsibility of the buyer.

ICH Guidelines

The Product does not, based on Celanese's knowledge, contain solvents in the concentration limits specified by the ICH Guideline Q3C(R9) for residual solvents.

The Product does not contain intentionally added sources of biological substances as described in ICH: Q5A (R2): Viral safety evaluation of biotechnology products derived from cell lines of human or animal origin.

Radiation

The Product is not subjected to any artificial radiation.

Regulatory Statements

Animal Testing

The Product was not subject of animal testing for cosmetic purposes by or on behalf of Celanese in order to meet the requirements of regulations on cosmetic products.

As a chemical products manufacturer and importer, Celanese is required to participate in the chemical industry's efforts to ensure the protection of human health and the environment, and also has obligations for example under the REACH regulation (Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals) and TSCA (Toxic Substances Control Act).

Celanese practice is to extensively search internally and externally for existing toxicological information before initiating testing. Where existing information does not exist for relevant endpoints, a comprehensive effort will be made to avoid the use of animals by employing alternative methods. When other means have been exhausted and animal testing may be required to develop data to ensure the protection of health and the environment, scientifically sound techniques to reduce the numbers of animals will be used. All applicable animal welfare laws will be followed to ensure care and compassion are exercised.

BSE/TSE

The Product is not derived from human or animal sources and thus we are not aware of any BSE/TSE.

Genetically Modified Organisms (GMO)

The chemistry to manufacture the Product does not use genetically modified or engineered organisms or biomaterials. No GMO/GME substances are added to the Product.

Global Country Inventories

The substance is listed in the following country inventories:

Chemical Inventory Status	listed	comments
Australia (AIIC)	yes	
Canada (DSL)	yes	
China (IECSC)	yes	
Japan (ENCS)	yes	
New Zealand (NZIOC)	yes	
Philippines (PICCS)	yes	
USA (TSCA)*	yes	active
Korea (KECI)	yes	

Taiwan (TCSI)	yes	
Mexico (INSQ)	yes	

* It is not subject to any action under TSCA Section 4, 5, 6, 8a, 8d, or 12b.

Excluded substances

These substances are not, based on Celanese's knowledge, present in the Product. They are not known to be generated in the production process, nor are we aware of such substances appearing as impurities in the raw materials. However, we do not have a specification for those substances, nor do we analyze for them.

Normal trace levels of metals may be found in the product.

- 2,4,6-Tris(tert-butyl)phenol (2,4,6-TTBP)
- 3-iodo-2-propynyl butylcarbamate (IBPC)
- Aflatoxins
- Algaecide / biocide
- Alkyl phenol ethoxylates (APEO) and their derivatives
- Amines
- Aromatic amines
- Aromatic hydrocarbons
- Asbestos
- Azo compounds
- BADGE (2,2-bis(4-hydroxyphenyl)propane bis(2,3-epoxypropyl) ether)
- BFDGE (bis(hydroxyphenyl)methane bis(2,3-epoxypropyl) ethers)
- Bisphenol A
- Bisphenol F
- Brominated flame retardants
- Coloring Agents / Dyes
- Crystalline silica and leucophyllite minerals
- Cytokines
- Decabromodiphenyl ether (DecaBDE)
- Dioxins
- Epoxy compounds
- Ethylene oxide
- Flame retardants
- Fluorochemicals
- Glycol ethers
- Gold
- Halogenated paraffins
- Halogenated solvents
- Heavy metals
- Hexachlorobutadiene (HCBD)
- Hybridoma cells
- Natural Latex
- Nitrates
- Nitrogen oxide
- Nitrosamines
- Nitrosating agents
- NOGE (novolac glycidyl ether)
- Organotin compounds
- Ortho phenyl phenol (OPP)
- Ozone depleting substances
- Palm Oils / Palm Kernel Oils
- Paradichlorobenzene (PDCB)
- Pentachlorothiophenol (PCTP)
- Per- and polyfluoroalkyl substances (PFAS)2
- Pesticides
- Phenol, isopropylated phosphate (PIP (3:1))
- Phosphates
- Phthalates
- Pigments
- Plasticizers
- Polybrominated substances
- Polychlorinated substances
- Polyvinyl chloride (PVC)
- Protein subunits
- Pyridine
- Quaternary ammonium compounds
- Radioactive substances
- Resins
- Sewer sludge
- Shellac
- Silicones
- Subunit vaccines from in-vitro cell culture
- Tantalum
- Tin
- Titanium dioxide

[2] PFAS as defined by the OECD: PFAS definition published by Organization for Economic Co-operation and Development (OECD) provided at this LINK (last accessed on 25 July 2024) or via DOI 10.1787/e458e796-en

- Isothiazolinone compounds
- Jatropha
- Melamine
- Microplastics
- Mineral Oil Aromatic Hydrocarbons (MOAH)
- Mineral Oil Saturated Hydrocarbons (MOSH)
- Nanomaterials per US EPA definition
- N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine
- Monoclonal antibodies
- Nanomaterials
- Nanoparticle-based protein Therapeutics
- Naphthalene
- Tribromophenol
- Triclosan
- Tris (nonylphenyl) phosphite
- Tungsten
- Vinyl Chloride
- Viral vectors and Viral vector derived products
- Zinc oxide
- Zinc pyrithione

EU REACH

Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Celanese is aware of the obligations imposed by 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 on REACH and SVHC, please contact Celanese at REACH@celanese.com.

Food & Food Contact

Celanese produces and offers the Product exclusively as a technical product. The Product is not of a Food or Food contact grade. Any suitability for use is the sole responsibility of the buyer to verify fitness of the Product for the intended use and fitness of the final good for introduction into the market and to ensure compliance of the final goods with the relevant regulations.

Packaging Inks in Swiss Ordinance of the FDHA on Materials and Articles (817.023.21)

Status: 21st January 2021

Packaging inks are regulated in the section 12 of the Ordinance of the FDHA on Materials and Articles, and the provisions of this Section apply to packaging inks as specific constituent elements of materials and articles.
General listings in Annex 2 and Annex 10 to the Swiss Ordinance of the FDHA on Materials and Articles (817.023.21):

Annex 2
Not listed

Annex 10

1	Nr.	1596

2	Bezeichnung des Stoffes	3-Methoxybutyl acetate
3	CAS-Nr.	0004435-53-4
4	Ref-Nr.	
5	Verwendung	S
6	Teil	B
7	SML [mg/kg]	
8	SML(T) (Gruppenbeschränkungsnummer):	

Restriction of Hazardous Substances (RoHS)

Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (recast) (RoHS)

Status: 21st January 2021

The Product as supplied by Celanese does not fall within the scope of directive 2011/65/EU, since it applies to electrical and electronic equipment (EEE) "falling within the categories set out in Annex I." (Art. 2)
Annex II of Directive 2011/65/EU lists "Restricted substances […] and maximum concentration values tolerated by weight in homogeneous materials"

- Lead (0.1 %)
- Mercury (0.1 %)
- Cadmium (0.01 %)
- Hexavalent chromium (0.1 %)
- Polybrominated biphenyls (PBB) (0.1 %)
- Polybrominated diphenyl ethers (PBDE) (0.1 %)
- Bis(2-ethylhexyl) phthalate (DEHP) (0,1 %)
- Butyl benzyl phthalate (BBP) (0,1 %)
- Dibutyl phthalate (DBP) (0,1 %)
- Diisobutyl phthalate (DIBP) (0,1 %)

The Product, based on Celanese's knowledge, does not contain these substances at the required limits. However, these substances are not routinely tested in our analytical procedures and quality control system, therefore, analytical data on the existence/non-existence of these substances cannot be provided.

Volatile Organic Compounds (VOC)

Status: 21st January 2021

The Product fulfills the criteria and is considered a VOC according to

- 2010/75/EU on industrial emissions (integrated pollution prevention and control) (Recast)
- 2004/42/CE on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products (Paints Directive)
- Swiss OVOC, Ordinance on the Incentive Tax on Volatile Organic Compounds 814.018

Attachment I: Sales Specifications

Celanese
The chemistry inside innovation™

Butoxyl®

(3-Methoxybutyl Acetate) CAS-No. 4435-53-4

Sales Specification

Specifications [1]		Limit	Unit
3-Methoxybutyl Acetate	min.	99.5	wt. %
3-Methoxybutanol	max.	0.1	wt. %
Water	max.	300	ppm
Acid Number	max.	0.05	mg KOH/g
Color	max.	5	Pt-Co
Evaporation Residue	max.	2.0	mg/100 mL
Density at 20 °C	-	0.954 – 0.956	g/cm³
Appearance	-	CFSM [2]	-

(1) Test methods available upon request.
(2) Clear and Free from Suspended Matter.

Product Numbers: 50000872

Additional Product numbers in use for other packaging. Please contact your Sales Support.

Spec. BUTOX-001-Global-Jun25

Supersedes: Butoxyl_50000872_SLS_e_V6 of November 15, 2016 (Version-No. 6)

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Celanese
The chemistry inside innovation™

Butoxyl® (BHT) (3-Methoxybutyl Acetate) CAS-No. 4435-53-4

Sales Specification

Specifications [1]		Limit	Unit
3-Methoxybutyl Acetate	min.	99.5	wt. %
3-Methoxybutanol	max.	0.1	wt. %
Water	max.	300	ppm
Acid Number	max.	0.05	mg KOH/g
Color	max.	5	Pt-Co
Evaporation Residue	max.	2.0	mg/100 mL
Density at 20 °C	-	0.954 – 0.956	g/cm^3
Appearance	-	CFSM [2]	-

Stabilized with approx. 10 ppm BHT

(1) Test methods available upon request.
(2) Clear and Free from Suspended Matter.

Product Numbers: 51012243

Additional Product numbers in use for other packaging. Please contact your Sales Support.

Spec. BUTOX-BHT-001-Global-Jun25

Supersedes: ButoxylBHT_51012243_SLS_e_V2 of November 15, 2016 (Version-No. 2)

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