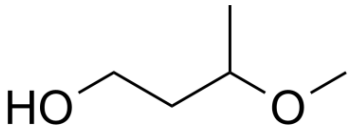
3-Methoxybutanol
Product Quality, Regulatory & Technical Information Package

June 2025

Product Name: **3-Methoxybutanol**



Chemical Name:	3-Methoxybutan-1-ol
CAS number:	2517-43-3
Celanese (bulk) Material number:	50000875

The Product is also available from Celanese as packed goods in IBC and drums.

Disclaimer

Celanese is supplying 3-Methoxybutanol as a technical grade product.

This document provides information about technical grade 3-Methoxybutanol ("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.

3-Methoxybutanol
Product Quality, Regulatory & Technical Information Package
June 2025

Table of Contents

Product Description

3-Methoxybutanol is a colorless, neutral liquid with a mild odor. It is miscible with water and commonly used organic solvents.

Dissolving power:
3-Methoxybutanol has good dissolving power for many natural resins, nitrocellulose, benzyl cellulose, polyvinyl butyrals, aldehydes, ketones and indene resins, phenol-formaldehyde, urea-formaldehyde and melamine-formaldehyde resins, carbamic acid ester resin, alkyd and maleic resins, commonly used plasticizers and most fats and drying oils such as linseed oil, castor oil and wood oil.

3-Methoxybutanol does not dissolve:
petroleum oils, waxes, rubber, chlorinated rubber, acetyl cellulose, polyisobutylene, polystyrene, non-post-chlorinated polyvinyl chloride (coatings), vinyl acetate/vinyl chloride/dicarboxylic acid copolymer, polyvinyl formal, polyvinyl carbazole and coumarone resin.

Ethyl cellulose, cellulose acetobutyrate, polyvinyl acetates and polyvinyl isobutyl ether swell considerably in 3-Methoxybutanol.

Dammar, ester resins and post-chlorinated polyvinyl chloride (coatings) are partially soluble in 3-Methoxybutanol.

Besides good dissolving power, 3-Methoxybutanol – as a low-volatility solvent – has similar advantages to n-Butanol. It is used in nitrocellulose brush lacquers to improve brush ability and flow. Small additions considerably reduce the viscosity of alkyd resin and oleo resinous paints and improve their brushability. In conventional and aqueous paints, the addition of 3-Methoxybutanol retards skinning.

3-Methoxybutanol can be used with Butyl Acetate to achieve special effects in relation to dissolving power, drying time and flow. 3-Methoxybutanol can also be used in combination with Butoxyl (3-Methoxybutyl Acetate).

3-Methoxybutanol
Product Quality, Regulatory & Technical Information Package
June 2025

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)		157 °C	315 °F
Density @ 20 °C (68 °F) (DIN 51 757)		0.919 – 0.923 g/cm³	7.67 – 7.70 lb/gal
Dielectric constant @ 20 °C (68 °F) (DIN 53 483)		14.4	
Evaporation number (DIN 53 170, diethylether = 1)		160	
Heat of Vaporization @ 101.3 kPa (14.69 psi)		116 J/g	0.050 Btu/lb_m
Melting Point		- 85 °C	- 121 °F
Molar Mass		104.15 g/mole	
Refractive index n_D^{20} (68 °F) (DIN 51 423, part 2)		1.415 – 1.416	
Solubility in Water @ 20 °C (68 °F)		miscible	
Specific heat @ 20 °C (68 °F)		0.53 kJ/(kg·K)	0.127 Btu/(lb_m·°F)
Vapor pressure	@ 20 °C (68 °F)	0.17 hPa	0.0025 psia
	@ 50 °C (122 °F)	4.6 hPa	0.067 psia
Viscosity @ 20 °C (68 °F)		3.7 mPa · s	
Water absorption @ 20 °C (68 °F)		miscible	
Specific electrical conductivity @ 20 °C		$1.2 \cdot 10^{-6}$ S·cm^{-1}	

Storage and Handling Recommendations

Storage

Recommended Blanketing	Dry Air[a,b] or 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] Aluminum [c]
Pumps	Cast Iron Carbon Steel	Stainless Steel [a]
Relief Valves	Stainless Steel [a]	–
Gaskets	Glass filled PTFE [d]	Graphite
Pump Seals	Single Mechanical Seal: Stainless Steel / Hastelloy C-276 metallic components, Kalrez O-rings	–
Valve Packing	PTFE [d]	Graphite
Pipe End Connections	Welded and flanged system	Threaded with PTFE [d] tape thread lubricant
Heat Exchanger	Product side: Stainless Steel [a]	Product side: Carbon Steel
Hoses	Stainless Steel [a]	EPDM [e] Aluminum [c]
Tank Truck	Stainless Steel [a]	Aluminum [c]
Tank Car	Carbon Steel	Stainless Steel [a] Lined Carbon Steel [b] Aluminum [c]
Barge	Stainless Steel [a]	Zinc Silicate or Epoxy Lined Carbon Steel Carbon Steel
Ship Tank	Stainless Steel [a]	Zinc Silicate or Epoxy Lined Carbon Steel

a. Type 304 or 316 Stainless Steel
b. Lining refers to high baked phenolic resin
c. May be used if temperature does not exceed 66 °C (150 °F)
d. Polytetrafluoroethylene
e. Ethylene – Propylene – diene – monomer – (peroxide cured grade)

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 specification provided as attachment.

Specifications	Analytical Methods [1]
3-Methoxybutanol	DIN 51 405 (GC)
3-Methoxybutyl Acetate	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
Appearance	Visual Examination

Manufacturing Process & Raw Materials

The Product is produced in a two-step process, by addition of Methanol to Crotonaldehyde and finishing with a hydrogenation step in the presence of a catalyst.

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

Crotonaldehyde + Methanol → 3-Methoxybutyraldehyde
3-Methoxybutyraldehyde + Hydrogen [Catalyst] → 3-Methoxybutanol

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.

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 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 air or 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.

Radiation

The Product is not subjected to any artificial radiation.

Regulatory Statements

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	

* 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
- Naphthalene
- 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

[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

- Cytokines
- Decabromodiphenyl ether (DecaBDE)
- Dioxins
- Epoxy compounds
- Ethylene oxide
- Flame retardants
- Fluorochemicals
- Glycol ethers
- Gold
- Halogenated solvents
- Heavy metals
- Hexachlorobutadiene (HCBD)
- Hybridomacells
- Isothiazolinone compounds
- Jatropha
- Melamine
- Microplastics
- Mineral Oil Aromatic Hydrocarbons (MOAH)
- Mineral Oil Saturated Hydrocarbons (MOSH)
- Monoclonal antibodies
- Nanomaterials per US EPA definition
- Nanoparticle-based protein Therapeutics
- N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine
- 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
- 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.	1396
2	Bezeichnung des Stoffes	3-Methoxybutanol
3	CAS-Nr.	0002517-43-3
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

3-Methoxybutanol

CAS-No. 2517-43-3

Sales Specification

Specifications [1]		Limit	Unit
3-Methoxybutanol	min.	99.5	wt. %
3-Methoxybutyl Acetate	max.	0.50	wt. %
Water	max.	0.20	wt. %
Acid Number	max.	0.05	mg KOH/g
Color	max.	10	Pt-Co
Appearance	-	CFSM [2]	-

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

Product Numbers: 50000875

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

Spec. 3MB-001-Global-Jun25

Supersedes: 3-Methoxybutanol_50000875_SLS_e_V9 of November 15, 2016 (Version-No. 9)

Celanese Performance Solutions Switzerland Sàrl
Route du Nant-d'Avril 146,
1217 Meyrin,
Switzerland
T+41 22 717 69 00

Celanese Pte Ltd
Celanese Singapore Pte Ltd
70 Anson Road
#21-01/02
Hub Synergy Point
Singapore 079905
T+65-6513-0443

Celanese Sales U.S. Ltd.
222 W. Las Colinas Blvd.
Suite 900N
Irving TX 75039 U.S.A.
T +1-972-443-4000

Celanese (Shanghai)
International Trading Co. Ltd.
Room 411, No. 473
Fute West 1st Road
Waigaoqiao Free Trade Zone
Shanghai, China
T +86-21-38619288