

Product Description and Handling Guide

Methyl Acetate

Methyl Acetate

Acetic acid methyl ester

CAS no. 79-20-9

EC no. 201-185-2



Product description

Methyl Acetate (assay min. 99.5%) is a neutral colorless liquid with a mild ester-like odor. It has a limited solubility in water; however it has good to high solubility with most common organic solvents.

Dissolving power:

Methyl Acetate is an excellent solvent for nitrocellulose, cellulose acetate, cellulose ethers, celluloid, polyvinyl acetates; a wide variety of resins including acrylics, vinyls, epoxies, urethanes, polyesters, phenolics, and plasticizers as well as for most oils and fats.

The following substances are partially or sparingly soluble:

shellac, manila copal, dammar, resin acid-modified phenolic resins, maleate resins, chlorinated rubber, novolaks, resols, urea-formaldehyde resins and polystyrene.

Insoluble substances:

rubber, bitumen, polyvinyl chloride, polyisobutylene and polyvinyl carbazole.

Possible applications

As of this publication date, Celanese Methyl Acetate has the highest purity available in the market. Celanese high purity Methyl Acetate is used as an intermediate in a variety of synthesis applications, i.e. in production of pharmaceutical intermediates.

Due to its high purity, Methyl Acetate can be used in numerous quality critical applications including as a solvent for polyurethane coatings and adhesives, blowing agent for polyurethane and other foams intermediates, process solvent for agricultural chemicals, general organic syntheses, etc. Other possible uses are paint strippers, fuel system cleaners and additives, battery electrolytes, polymerization solvents, cleaners for electronics, precision parts, photoresist strippers and inks: flexographic, gravure, marking and writing and for ink jet printers.

Methyl acetate is a volatile solvent. It is therefore used in fast-drying paints and for the manufacture of celluloid adhesives from waste film. Methyl acetate is often used in lacquer solutions to lower the viscosity. Methyl acetate may also be used in perfumery and in dye manufacture.

Product Description and Handling Guide

Methyl Acetate

Methyl Acetate's fast evaporation range suggest its use in formulated products such as fast dry industrial maintenance coatings, air-dry automotive refinish paints, aerosol coatings, quick dry adhesives, aerospace coatings and spray applied furniture coatings. For example, furniture coatings are often acrylic or nitrocellulose based lacquers containing a blend of fast and slow evaporation solvents. In such a system, the fast evaporation rate of Methyl Acetate can be balanced with a slower evaporation "tail" solvent to maintain the desired overall drying rate. Of course, the formulator must also be cognizant of flash point and blush resistance limitations when reformulating with Methyl Acetate.

Celanese also offers Methyl Acetate 80% with a minimum assay of 80.1% (by GC). The methanol content of the 80% grade material contains up to 19.9% methanol (by GC)

Celanese also offers Methyl Acetate 88-97 % with a minimum assay of 88% (by GC). The methanol content of the 88-97 % grade material contains up to 10 % methanol (by GC).

Further information regarding Methyl Acetate 80% and 88-97 % can be made available upon request.

Characteristic data Methyl Acetate 99,5 %

Typical Properties	Unit	
Molar mass	g/mol	74.08
Boiling point at 1013 hPa	°C	57
Melting temperature	°C	– 99
Density at 20 °C (DIN 51 757, method D)	g/cm ³	0.930 – 0.934
Refractive index n _D at 20 °C (DIN 51 423, part 2)		1.360 – 1.362
Viscosity at 25 °C	mPa · s	0.364
Solubility in water at 20 °C	g/l	243.5
Water absorption at 20 °C	% (w/w)	8
Vapour pressure at 20 °C	hPa	228
at 50 °C	hPa	787
Vapour density (Air=1)		2.8
Dielectric constant at 20 °C (DIN 53 484)		7.3
Evaporation number (DIN 53 170, diethyl ether = 1)		2.2

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

Product Description and Handling Guide

Methyl Acetate

Storage

Recommended Blanketing	Dry Air ^{1,2} or Dry Nitrogen ^{1,2,3}
Recommended Temperature Maximum	100 °F (37.8 °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.

Methyl Acetate is available from Celanese Chemicals as bulk material.

Shelf life

The shelf life of Methyl Acetate 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.

Product Description and Handling Guide

Methyl Acetate

Materials for storage and transport

Unit / element	Acceptable Material	Alternate Material
Tank	Carbon Steel (rust free)	Stainless Steel ¹ , Aluminum, Lined Carbon Steel ²
Piping	Carbon Steel	Stainless Steel ¹ , Aluminum
Valves	Carbon Steel	Stainless Steel ¹ , Aluminum
Pumps	Cast Iron, Carbon Steel	Stainless Steel ¹
Relief Valves	Carbon Steel	Stainless Steel ¹
Gaskets	Glass filled PTFE ³	PTFE ³
Pump Seals	Single Mechanical Seal: Stainless Steel / Hastelloy C-276 metallic components, Kalrez O-rings	—
Valve Packing	PTFE ³	Braided PTFE ³
Pipe End Connections	Welded and flanged system	Threaded with PTFE ³ tape thread lubricant
Heat Exchanger	Product side: Carbon Steel	Product side: Stainless Steel ¹
Hoses	Stainless Steel ¹	Butyl Rubber, Aluminum
Tank Truck	Stainless Steel ¹	Aluminum
Tank Car	Carbon Steel	Aluminum, Stainless Steel ¹
ISO Tank	Carbon Steel	Stainless Steel ¹
Barge	Zinc Silicate or Epoxy Lined Carbon Steel	Stainless Steel ¹ , Carbon Steel
Ship Tank	Zinc Silicate or Epoxy Lined Carbon Steel	Stainless Steel ¹

1. Type 304 or 316 Stainless Steel
2. Lining refers to a high baked phenolic resin
3. Polytetrafluoroethylene

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

Product Description and Handling Guide

Methyl Acetate

Other Product Information Methyl Acetate 99,5 %

The following statements about Methyl Acetate 99,5 % 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.: 201-185-2
ELINCS (Europe)		
ENCS (Japan)	X	Japanese ENCS Number (2)-725
ISHL (Japan)	X	Japanese ISHL Number (2)-725
KECI (Korea)	X	Korean ID Number: KE-23405
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

Animal Origin, Genetically Modified Organisms

BSE/TSE Statement

To the best of our knowledge Methyl Acetate 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

Methyl Acetate

Allergens Guide

Celanese Acetyl Intermediates does not use any ingredients of animal or plant origin in the manufacture of Methyl Acetate (CAS no. 79-20-9). Therefore, we can certify that the supplied Methyl Acetate does not contain any of the main food allergens (Peanut, Soya, Bean, Milk, Egg, Fish, Peas, Barley, Lupine, Wheat, Mollusks). Methyl Acetate is manufactured through an entirely synthetic process and will not contain any gluten. No nutritional data is available for Methyl Acetate.

Residual Solvents

Celanese Methylacetate 99,5 % does not contain residual solvents in the concentration limits specified by the so called “tripartite guideline” CPMP/ICH/283/95 and CPMP/ICH/1940/00 (0,5%). Celanese Methylacetate is specified with a purity of min 99.5 %. In fact the product does usually show a higher purity. Methylacetate itself is a class 3 solvent within the definition of the guideline. The major impurities classified as solvent according to CPMP/ICH/283/95 and CPMP/ICH/1940/00 contained in Methylacetate are Methanol (max. 0.1 % w/w), Acetic Acid (max. 0.005 % w/w). Methanol and Acetic Acid are listed as class 3 solvents in the guideline.

Benzene content is regularly checked and is < 1 mg/kg.

Catalysts

No metal, metal-organic or biological/protein based catalysts are being used in the production/purification of Methylacetate 99,5 %.

Heavy Metals

Due to the raw materials used and our manufacturing process, Methylacetate 99,5 % is not expected to contain heavy metals.

However, heavy metals are not controlled by our routine analytical procedures and quality control system.

2002/95/EC as amended- RoSH (Restriction of the Use of Certain Hazardous Substances in electrical and electronic equipment)

The directive applies to electrical and electronic equipment, i.e. finished articles, and therefore only indirectly to Celanese Chemicals products used as raw materials or during manufacture.

To the extent that Methylacetate 99,5 % may be used in the manufacture of the articles subject to this regulation, Methylacetate 99,5 % is not expected to contain lead, cadmium, mercury and hexavalent chromium (Pb, Cd, Hg, Cr^{VI}) and both polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).

This statement is based on the production process and raw materials used for our product Methylacetate 99,5 %.

Kosher

Methyl Acetate 99,5 % manufactured by Celanese is Kosher certified. Certificate is available on request.

Product Description and Handling Guide

Methyl Acetate

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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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