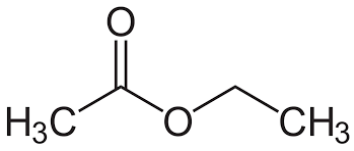
Ethyl Acetate
Product Quality, Regulatory & Technical Information Package
June 2025

Product Name:	**Ethyl Acetate**
Chemical Name:	Ethyl Acetate
CAS number:	141-78-6
Celanese (bulk) Material number:	50000455, 51010923, 51011132



Disclaimer

Celanese is supplying Ethyl Acetate as a technical grade product.

This document provides information about technical grade Ethyl Acetate ("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.

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Product Description

Ethyl Acetate is a neutral colorless liquid with a faint and pleasant fruity odor. It is miscible in all proportions with the common organic solvents.

Ethyl Acetate is an excellent solvent for nitrocellulose, cellulose ethers, celluloid, chlorinated rubber, some natural resins, and numerous synthetic resins e.g., polyvinyl acetates, polyacrylates, polystyrene (coatings) and alkyd resins as well as plasticizers, fats, waxes, and oils. A mixture of Ethyl acetate and 20 % ethanol is a good solvent for cellulose acetate.

The following substances are insoluble in Ethyl Acetate: Rubber, bitumen, polyisobutylene, polyvinyl carbazole, polyvinyl chloride (not post-chlorinated) and some natural resins e.g., elemi, shellac, dammar and congo copal.

The main uses of Ethyl Acetate are in the manufacture of a variety of coating formulations such as epoxies, urethanes, cellulosics, acrylics and vinyls. Applications for these coatings are numerous including nitrocellulose and cellulose acetate lacquers, varnishes, and shellacs for wood furniture and fixtures, auto refinishing, decorating ceramic objects, and architectural coatings for interiors and exteriors. It is a solvent component in adhesives, in spread-coating compounds for artificial leather, and in cleaners (paint solvents or thinners). Ethyl Acetate may be used as a solvent for the isocyanate component of catalyzed lacquers.

Due to its low toxicity and agreeable odor, Ethyl Acetate has applications as a solvent in inks for flexographic and rotogravure printing, where its main function is to dissolve the resin, control the viscosity and modify the drying rate. Ethyl acetate can also be used for preparing wool fabrics for dying. It may be used in organic syntheses (esters, drugs), and as an extraction solvent in the production of pharmaceuticals and foods.

Ethyl Acetate may also be used as a gelling agent in the manufacture of powder, in the manufacture of essences and perfumes, as a denaturant, as an auxiliary in the manufacture of glazed and transparent paper, and as an additive to polishes. In the construction sector, Ethyl Acetate may be used as a hardener for the alkali-sodium silicate stabilizer (alkali silicates) employed in soil stabilization by the soil injection technique.

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)		77.1 °C	170.8 °F
Critical Compressibility Factor		0.255	
Critical Pressure		3.88 MPa	562.67 psia
Critical Temperature		250.15 °C	482.27 °F
Critical Volume		286 cm³/mole	
Dielectric Constant @20 °C (68 °F)		6.0	
Evaporation Rate (n-Butyl Acetate = 1)		4.5	
Evaporation number (diethyl ether = 1)		2.9	
Heat of Vaporization	@20 °C (68 °F)	408.5 kJ/kg	175.6 Btu/lb_m
	@30 °C (86 °F)	401.5 kJ/kg	172.6 Btu/lb_m
	@50 °C (122 °F)	387.1 kJ/kg	166.4 Btu/lb_m
Liquid Heat Capacity	@20 °C (68 °F)	1.926 kJ/(kg·K)	0.460 Btu/(lb_m·°F)
	@30 °C (86 °F)	1.955 kJ/(kg·K)	0.467 Btu/(lb_m·°F)
	@50 °C (122 °F)	2.022 kJ/(kg·K)	0.483 Btu/(lb_m·°F)
Liquid Thermal Conductivity	@20 °C (68 °F)	0.146 W/(m·K)	0.0842 Btu/(hr·ft·°F)
	@30 °C (86 °F)	0.142 W/(m·K)	0.0821 Btu/(hr·ft·°F)
	@50 °C (122 °F)	0.135 W/(m·K)	0.0781 Btu/(hr·ft·°F)
Melting Point		- 83.8 °C	- 118.8 °F
Molar Mass		88.11 g/mole	
Refractive Index n_D^{20} (68 °F)		1.371 – 1.373	
Solubility @20 °C (68 °F) wt-%, Ethyl Acetate in Water		8.0	
Solubility @20 °C (68 °F) wt-%, Water in Ethyl Acetate		3.3	
Surface Tension	@20 °C (68 °F)	0.0238 N/m	
	@30 °C (86 °F)	0.0227 N/m	
	@50 °C (122 °F)	0.0204 N/m	
Vapor Density (Air = 1)		3.04	
Viscosity	@20 °C (68 °F)	0.45 mPa · s	
	@30 °C (86 °F)	0.41 mPa · s	
	@50 °C (122 °F)	0.33 mPa · s	

T (°F)	T (°C)	Density in Air (g/cm³)
33.8	1	0.9227
41	5	0.9178
50	10	0.9117
59	15	0.9056
68	20	0.8995
77	25	0.8934
86	30	0.8873
95	35	0.8812
104	40	0.8751

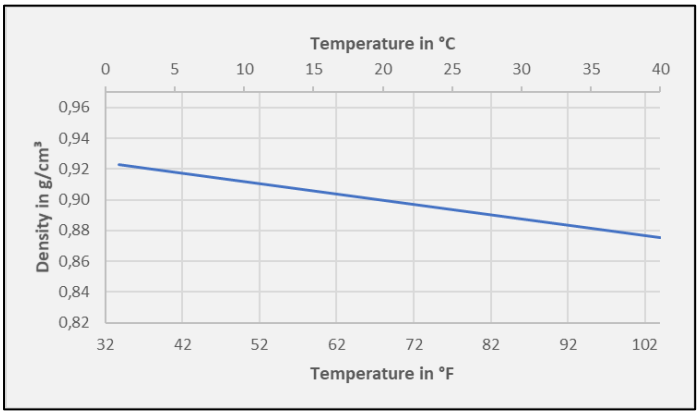


Figure 1: Density in Air as a function of Temperature

T (°F)	T (°C)	Vapor Pressure (hPa)	Vapor Pressure (kg/cm²)
32	0	32.4	0.033
41	5	43.1	0.044
50	10	56.9	0.058
59	15	74.5	0.076
68	20	97.1	0.099
77	25	124	0.127
86	30	158	0.161
95	35	199	0.203
104	40	248	0.253
113	45	307	0.313
122	50	377	0.384

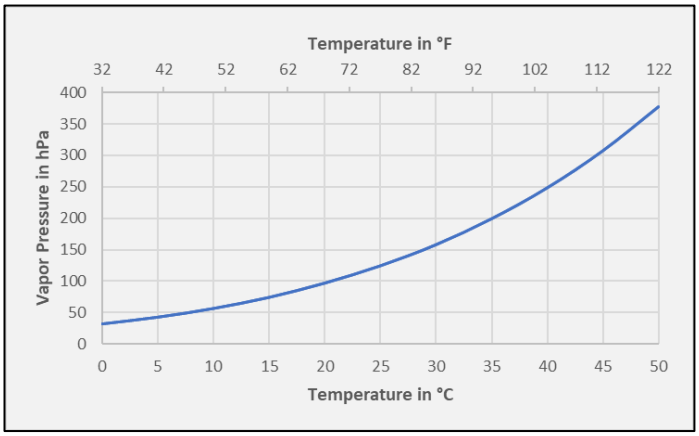


Figure 2: Vapor Pressure as a function of Temperature

Storage and Handling Recommendations

Storage

Recommended Blanketing	Air[a,b] or Dry Nitrogen[c]
Recommended Temperature	Ambient
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.
- Protect small containers from physical damage. 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. Use spark-resistant tools.
- 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.
- 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.
- 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.
- Closed containers exposed to temperatures above 49 °C (120 °F) in transit or storage may develop excessive vapor pressure.
- For further information on safety and handling, please use the following link: https://www.celanese.com/sds-search

Packaging

The following containers are suitable for handling and transportation of the Product:

- DOT 111A100W1 Tank Cars
- DOT MC 307 or DOT 407 Tank Trucks
- UN 1A1/X1.2/300 55-Gallon Carbon Steel Drums
- IMO 1 ISO Tank
- Ship Tank and Barge

The Product is available from Celanese as bulk material.

Materials of Construction

Unit / element	Acceptable Material	Alternate Material
Tank	Stainless Steel [a]	Aluminum [b] Lined Carbon Steel [c] Carbon Steel [d]
Piping	Carbon Steel [d]	Stainless Steel [a] Aluminum [b]
Valves	Carbon Steel [d]	Stainless Steel [a] Aluminum [b]
Pumps	Cast Iron, Carbon Steel [d]	Stainless Steel [a]
Relief Valves	Carbon Steel [d]	Stainless Steel [a]
Gaskets	Glass filled PTFE [e]	PTFE [e]
Pump Seals	Single Mechanical Seal: # 5 Carbon to Silicon carbide faces	–
Valve Packing	PTFE [e]	Braided PTFE [e]
Pipe End Connections	Welded and flanged system	Threaded with PTFE [e] tape thread lubricant
Heat Exchanger	Product side: Carbon Steel [d]	Product side: Stainless Steel [a]
Hoses	Stainless Steel [a]	Aluminum [b]
Tank Truck	Stainless Steel [a,]	Aluminum [b]
Tank Car	Stainless Steel [a]	Aluminum [b] Carbon Steel [d]
ISO Tank	Stainless Steel [a]	Aluminum [b] Carbon Steel [d]
Barge	Stainless Steel [a]	Carbon Steel [d] Lined Carbon Steel [c] Zinc Lined Carbon Steel [f]
Ship Tank	Stainless Steel [a]	Carbon Steel [d] Lined Carbon Steel [c] Zinc Lined Carbon Steel [f]

a. Type 304 or 316 Stainless Steel
b. Use 3000, 5000, 6000 series Aluminum when temperature does not exceed 120 °F (49 °C)
c. Lining refers to high baked phenolic resin
d. Rust free
e. Polytetrafluoroethylene
f. Zinc lining refers to Zinc Silicate, Inorganic Zinc or Zinc Rich Inorganic

Product Quality Statements

Manufacturing Locations

The Product is produced at manufacturing locations in Cangrejera (Mexico) and Singapore.

- Cangrejera Plant
  Carretera Coatzacoalcos-Villahermosa, Km. 12.3
  96400 Coatzacoalcos
  Veracruz, Mexico

- Singapore Plant
  21 Sakra Avenue
  Singapore 627883

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. Copies of the Sales Specifications are 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.

Characteristic	Analytical Methods [1]
Ethyl Acetate	DIN 51 405 / ASTM D 3545 / Gas Chromatography
Ethanol	DIN 51 405 / ASTM D 3545 / Gas Chromatography
Water	DIN 51777 / ASTM D 1364 (mod. Karl-Fisher Method)
Acidity as Acetic Acid	DIN EN ISO 2114 / ASTM D 1613
Color	DIN EN 1557 / DIN ISO 6271 / ASTM D 1209 / ASTM 5386
Residual Odor	ASTM D 1296
Appearance	Visual Examination / ASTM E 2680
Specific Gravity at 20 °C/20 °C	ASTM D 4052

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

Manufacturing Process & Raw Materials

Reaction Section

The Product is manufactured continuously using dedicated production units and closed equipment. The production of the Product relies on chemical synthesis, namely esterification. Ethanol and acetic acid, are being used as feedstock for the synthesis according to the chemical equation:

Acetic Acid Ethanol Ethyl Acetate

The catalyst used is a non-metallic proprietary catalyst. No metal catalysts or metal reagents, metal-organic or biological/protein-based catalysts are being used in the synthesis of the Product.

Ethanol as raw material may be produced from starch or sugar fermentation.

Acetic acid as raw material is synthetically produced via rhodium catalyzed methanol carbonylation with raw materials that are partly 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.

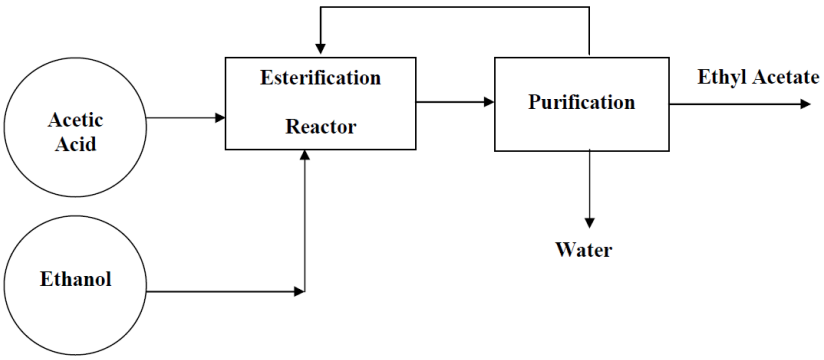
The raw materials and the catalyst are fed into an esterification reactor where the major products are ethyl acetate and water. The reaction is reversible but by controlling the optimum operating conditions the equilibrium is shifted towards the product.

Purification Section

Crude ethyl acetate from the reaction section of the process is then sent to the purification train where it is purified to remove remaining ethanol, water and heavy and light impurities using distillation and sold as finished product.

The process and finished product streams are monitored using distributed control system and laboratory analyses.

Process Diagram



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.

Kosher and Halal

The Product is neither available as a certified Kosher grade nor as a certified Halal grade.

Celanese supplies basic chemicals. Our production technology relies on a continuous production process, and the raw materials are partly from fermentation and partly from fossil origin from national wide pipeline networks that might contain trace amounts of bio-content, independent of any Celanese activity. All catalysts and processing aids are of synthetic origin; we do not intentionally use any raw materials having an animal (diary) origin, nor is our process likely to be contaminated by such.

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 itself is defined as a class 3 solvent by the ICH Guideline for residual solvents. The major impurities classified as solvent according to the ICH Guideline Q3C(R9) for residual solvents contained in the Product are Acetic Acid and Ethanol. Acetic Acid and Ethanol are listed as class 3 solvents in the guideline.

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

The Product as of this date is listed in the following regulations:

- CERCLA Hazardous Substances

The Product as of this date is not listed in:

- Chemical Weapons Convention
- Drug Precursor Lists
- California Proposition 65 (as of January 2025)

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

Raw materials are partly 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 in terms of BSE/TSE are not influenced by the bio-content feedstock.

Genetically Modified Organisms (GMO)

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

GMO's may be used in the fermentation-based production of the raw material Ethanol. GMOs are not, based on Celanese's knowledge, present in the Product. However, we do not have a specification for them, and we do not analyze for them.

Acetic acid is produced from fossil origin raw materials from national wide industry pipeline networks that might contain trace amounts of bio-content, independent of any Celanese activity. This bio-content might come from GMO sources. Because of the multiple reaction and purification steps along the value chain to produce Celanese's products, we believe that the quality properties in terms of GMO are not influenced by the bio-content feedstock. However, we do not have a specification for them, and we do not analyze them.

Global Country Inventories

The substance is listed in the following country/region 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.

Allergens

The Product does not, based on Celanese's knowledge, contain the following substances and products thereof commonly associated with food allergens:

- Peanut
- Soya
- Bean
- Milk
- Egg
- Fish
- Peas
- Barley
- Lupine
- Mollusks
- Sulfur Dioxide
- Sulphites
- Tree nuts
- Wheat
- Crustaceans
- Gluten
- Glycerol
- Mustard

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 them.

Benzene and Toluene may be present in the Product and are monitored internally. Typical levels are below 1 ppm (each). They are not part of Celanese's Sales Specification for the Product.

No metals are intentionally added to the Product or the production process. Normal trace levels of metals however may be found in the Product.

Substances listed in:

- Persistent Bioaccumulative Toxic (PBT) Chemicals listed by the TRI Program as of May 16, 2021
- Chemicals listed in EPA's Toxic and Priority Pollutants Under the Clean Water Act as of May 16, 2021, and listed in 40CFR 401.15 and 40 CFR 423, Appendix A respectively
- Substances listed in North Carolina TAC List 15A NCAC 02Q .0711 other than those listed in the VOC section below as of May 16, 2021
- Substances listed in or restricted by CONEG
- ZDHC Manufacturing Restricted Substances List, Version 3.1 (Dec 2024) above applicable thresholds

- 2,4,6-Tris(tert-butyl)phenol (2,4,6-TTBP)
- Aflatoxins
- Algaecide / biocide
- Alkyl phenol ethoxylates (APEO)
- Antioxidants, such as BHT, BHA, TNPP
- Aromatic amines
- Aromatic hydrocarbons (other than Benzene and Toluene)
- 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
- Monoclonal antibodies
- Nanomaterials per US EPA definition
- Nanoparticle-based protein Therapeutics
- 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)

- Brominated flame retardants
- Butylated hydroxytoluene (BHT)
- Coloring Agents / Dyes
- Cyclohexanone
- Cytokines
- Decabromodiphenyl ether (DecaBDE)
- Dioxins
- Epoxy compounds
- Ethylene oxide
- Flame retardants
- Fluorochemicals
- Formaldehyde and Formaldehyde releasers
- Fragrances
- Glycol ethers
- Gold
- Halogens / Halogenated compounds
- Heavy metals
- Hexachlorobutadiene (HCBD)
- Hybridoma cells
- Jatropha
- Melamine
- Microplastics
- Mineral Oil Aromatic Hydrocarbons (MOAH)
- Mineral Oil Saturated Hydrocarbons (MOSH)
- Per- and polyfluoroalkyl substances (PFAS) [2]
- Pesticides
- Phenol, isopropylated phosphate (PIP 3:1)
- Phosphates
- Phthalates
- Pigments
- Plasticizers
- Polybrominated substances
- Polychlorinated substances
- Polycyclic Aromatic Hydrocarbons (PAH)
- Polyvinyl chloride (PVC)
- Protein subunits
- Radioactive substances
- Sewer sludge
- Silicones
- Subunit vaccines from in-vitro cell culture
- Sulfites, Sulfur dioxide, sulfates
- Talc
- Tantalum
- Tin
- Tribromophenol
- Triclosan
- Tungsten
- Viral vectors and Viral vector derived products

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.

[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

Ethyl Acetate itself is listed in the following regulations for use in food contact applications and considered Generally Recognized as Safe (GRAS):

- 21CFR 182.60 - Synthetic flavoring substances and adjuvants
- 21CFR 173.228 - Caffeine extraction solvent for tea and coffee
- 21CFR 175.105 - Food contact adhesives
- 21CFR 176.170 and 176.180 - food packaging
- Mercosur: GMC Resolution 32/07 (Positive List of Additives) with no restrictions

Commission Regulation (EU) No 10/2011 on plastic materials and articles intended to come into contact with food

Status: 21st January 2021

The Product is placed on the market by Celanese exclusively as a technical grade material. Regulation 10/2011/EU as amended applies to the materials and articles specified in Article 2 of this regulation. The Product does not fall under the scope of this regulation.

The component Ethyl acetate is generally listed in ANNEX I, Table 1 in the "Union list of authorized monomers, other starting substances, macromolecules obtained from microbial fermentation, additives, and polymer production aids" with the following entry:

(1)	FCM substance No	327
(2)	Ref. No	30140
(3)	CAS No	0000141-78-6
(4)	Substance name	acetic acid, ethyl ester
(5)	Use as additive or polymer production aid (yes/no)	substance is authorized to be used as additive or polymer production aid
(6)	Use as monomer or other starting substance or macromolecule obtained from microbial fermentation (yes/no)	substance is not authorized to be used as monomer or other starting substance or macromolecule obtained from microbial fermentation
(7)	FRF applicable (yes/no)	migration results cannot be corrected by the Fat Consumption Reduction Factor (FRF)
(8)	SML [mg/kg]	no entry

Dual Use Additives (Food)

Status: 21st January 2021

The Product is placed on the market by Celanese exclusively as a technical grade material. It is ultimately the responsibility of the customer to determine the suitability of the material for their specific end use.

“Certain substances used in food contact plastics are, at the same time, authorized food additives or authorized flavorings respectively by Regulation (EC) No 1333/2008 or Regulation (EC) No1334/2008 or their implementing measures. These substances are called dual-use additives.

To decide if a substance can be considered as a dual-use additive, it is sufficient that the chemical identity of the plastic additive matches that of an authorized food additive or flavoring, regardless of its purity or whether or not the substance is subject to a restriction in food and/or in the plastic." [3]

The Product is not listed in both regulations (EC) No 1333/2008 as amended and Regulation (EC) No1334/2008 as amended.

Food Additives
Regulation (EC) No 1333/2008 on food additives (last amended by Commission Regulation (EU) No 601/2014 of 4 June 2014)
The Product is not listed.

Flavorings
Regulation (EC) No 1334/2008 on flavorings and certain food ingredients with flavoring properties for use in and on foods and amending Council Regulation (EEC) No 1601/91, Regulations (EC) No 2232/96 and (EC) No 110/2008 and Directive 2000/13/EC.
The Product is generally listed in Annex I Union List of Flavorings and Source Materials, PART A Union list of flavoring substances:

(1)	FL No	09.001
(2)	Chemical name	Ethyl acetate
(3)	CAS No	141-78-6
(4)	JECFA No	27
(5)	CoE No	191
(6)	Purity of the named substance at least 95% unless otherwise specified	
(7)	Restrictions of Use	
(8)	Footnote	
(9)	Reference	JECFA

Directive 2009/32/EC on the approximation of the laws of the Member States on extraction solvents used in the production of foodstuffs and food ingredients (Recast)

Status: 21st January 2021

The Product is placed on the market by Celanese exclusively as a technical grade material. It is ultimately the customer's responsibility to determine the suitability of the material for his specific end-use application.

The Product is mentioned in directive 2009/32/EC Annex I, Part I, with the following entry:

"Annex I
Extraction solvents which may be used during the processing of raw materials, of foodstuffs, of food components or of food ingredients
Part I
Extraction solvents to be used in compliance with good manufacturing practice for all uses [3]
Name: […]
Ethyl acetate

[…]

[3] Quote from "Union Guidelines on Regulation (EU) No 10/2011 on plastic materials and articles intended to come into contact with food"(published by the European Commission Health And Consumers Directorate-General, 21.02.2014)
http://ec.europa.eu/food/food/chemicalsafety/foodcontact/docs/10-2011_plastic_guidance_en.pdf

[3] An extraction solvent is considered as being used in compliance with good manufacturing practice if its use results only in the presence of residues or derivatives in technically unavoidable quantities presenting no danger to human health."

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

1	Stoff-Nr..	780
2	Bezeichnung des Stoffes	Acetic acid, ethyl ester
3	CAS-Nr.	0000141-78-6
4	Verpackungsmaterial-Referenz-Nr. der Europäischen Kommission für den Stoff	30140
5	Verwendung als Monomer oder als anderer Ausgangsstoff oder als durch mikrobielle Fermentation gewonnenes Makromolekül	
6	Verwendung als Zusatzstoff oder als Hilfsstoff bei der Herstellung von Kunststoffen	A
7	FRF anwendbar	
8	SML [mg/kg]	
9	SML(T): Gruppenbeschränkungs-Nr	
10	Beschränkungen und Spezifikationen	
11	Hinweise zur Konformitatsprüfung	

Annex 10

1	Nr.	780
2	Bezeichnung des Stoffes	Acetic acid, ethyl ester
3	CAS-Nr.	0000141-78-6
4	Ref-Nr.	30140
5	Verwendung	S
6	Teil	A
7	SML [mg/kg]	

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

Ethyl Acetate - Global

Ethyl Acetate

CAS-No. 141-78-6

Sales Specification

Specifications [1]		Limit	Unit
Ethyl Acetate [2]	min.	99.70 [3]	wt. %
Ethanol	max.	0.050	wt. %
Water	max.	0.030	wt. %
Acidity as Acetic Acid	max.	0.005	wt. %
Color	max.	10	Pt-Co
Odor [4]	-	Non-Residual	-
Appearance	-	CFSM [5]	-
Specific Gravity 20 °C/20 °C	-	0.900 – 0.903	-

(1) Test methods available upon request.
(2) Product is Urethane grade.
(3) By Difference – 100.0 % minus (acid plus water plus impurities as determined by Gas Chromatography).
(4) Product conforms to limit, but tests are not routinely performed.
(5) Clear and Free from Suspended Matter.

Product Number: 50000455

Spec. ETAC-001-Global-Jun25

Supersedes: ETAC-001 June 2023 and EthylAcetate_50000455_SLS_e_V7 of November 15, 2016 (Version-No. 7)

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Ethyl Acetate 99.9 % - Asia Outside China (AOC)

Ethyl Acetate 99.9 %

CAS-No. 141-78-6

Sales Specification

Specifications [1]		Limit	Unit
Ethyl Acetate [2]	min.	99.90	wt. %
Ethanol	max.	0.01	wt. %
Water	max.	0.01	wt. %
Acidity as Acetic Acid	max.	0.005	wt. %
Color	max.	10	Pt-Co
Odor [3]	-	Non-Residual	-
Appearance	-	CFSM [4]	-

(1) Test methods available upon request.
(2) By Difference – 100.0 % minus (acid plus water plus impurities as determined by Gas Chromatography).
(3) Product conforms to limit, but tests are not routinely performed.
(4) Clear and Free from Suspended Matter.

Product Number: 51011132

Spec. ETAC99.9-002-AOC-Jun25

Supersedes: Apr. 2013

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High-Purity Ethyl Acetate - Americas

Celanese
The chemistry inside innovation™

High Purity Ethyl Acetate

CAS-No. 141-78-6

Sales Specification

Specifications [1]		Limit	Unit
Ethyl Acetate [2]	min.	99.85	wt. %
Ethanol	max.	0.01	wt. %
Water	max.	0.015	wt. %
Acidity as Acetic Acid	max.	0.005	wt. %
Color	max.	10	Pt-Co
Odor [3]	-	Non-Residual	-
Appearance	-	CFSM [4]	-

(1) Test methods available upon request.
(2) By Difference – 100.0 % minus (acid plus water plus impurities as determined by Gas Chromatography).
(3) Product conforms to limit, but tests are not routinely performed.
(4) Clear and Free from Suspended Matter.

Product Number: 51010923

Spec. ETACHP-002-Americas-Jun23

Supersedes: Feb. 2013

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