

Acetic Anhydride

Product Quality, Regulatory & Technical Information Package

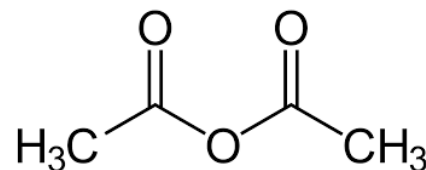
October 2025

Product Name: Acetic Anhydride

Chemical Name: Acetic Anhydride

CAS number: 108-24-7

Celanese (bulk) Material number: 50000437



Disclaimer

Celanese is supplying Acetic Anhydride as a technical grade product.

This document provides information about technical grade Acetic Anhydride ("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

Acetic Anhydride is a clear, colorless liquid with a very pungent, penetrating, vinegar-like odor. It is completely miscible with diethyl ether and can be easily dissolved in the usual organic solvents; it reacts with alcohols. Acetic Anhydride is an excellent solvent for numerous organic and inorganic products.

In the presence of water, Acetic Anhydride reacts slowly at room temperature to form acetic acid. At moderate and elevated temperatures, however, this reaction can be extremely exothermic and violent. It is accelerated by catalytic quantities of sulfuric acid or other mineral acids and may even be explosive.

In the chemical industry, the reactivity of the acetyl group of Acetic Anhydride is used to synthesize end products and intermediates.

Acetic Anhydride is widely employed industrially for its acetylating and dehydrating properties. A major use for it is the acetylation of cellulose to produce acetate fibers, plastics, coatings and films. It is especially valuable for the direct esterification of alcohols where acetic acid cannot be used.

Another large use for Acetic Anhydride is in the manufacture of acetylsalicylic acid (aspirin), acetylcholine hydrochloride, acetophenacetin, sulfonamides, aceto-p-aminophenol, cortisone, acetanilide, theophylline, sulfa drugs, certain vitamins and hormones, and many other pharmaceuticals and pharmaceutical intermediates.

Acetic Anhydride is also used to produce acetyl ricinoleates, triacetin, acetyl tributyl citrate, and other plasticizers. Triacetic glycerol esters are used as plasticizers in the plastics and paint industry, as fixatives in perfumery and as solvents for fungicides and basic dyes.

Acetylated fatty acid monoglycerides and acetylated animal and vegetable fats are used as additives and auxiliaries in the food industry. In this connection, the relevant statutory food regulations must be observed.

Another chemical use is in the manufacture of acetyl peroxide. Acetic Anhydride is also used as an intermediate in the manufacture of explosives, weed killers and in the chemical treatment of papers and textiles.

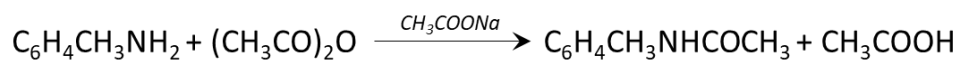
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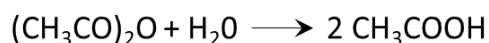
The reactions of Acetic Anhydride are those of a typical acid anhydride:

1. Acetylation

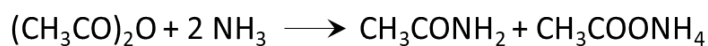


2. Conversion into acids and acid derivatives

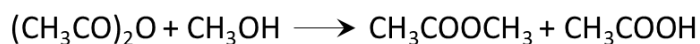
a. Hydrolysis into acetic acid



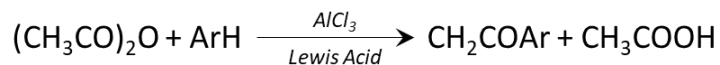
b. Ammonolysis into acetamide



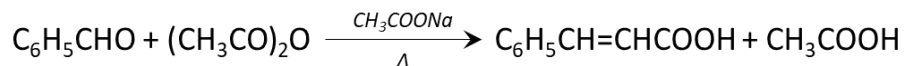
c. Alcoholysis into esters



3. Formation of ketones by Friedel-Crafts acylation



4. Condensation reactions (Perkin)



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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)	140 °C	284 °F	
Coefficient of Thermal Expansion @ 20 °C (68 °F)	1.12 · 10 ⁻³		
Critical Pressure	400.1 Pa	0.058 psia	
Critical Temperature	332.8 °C	631.04 °F	
Dielectric Constant @ 20 °C	20.5		
Evaporation rate (n-Butyl Acetate = 1)	0.46		
Heat of Vaporization	@ 20 °C (68 °F)	478.46 kJ/kg	205.7 Btu/lb _m
	@ 30 °C (86 °F)	472.18 kJ/kg	203.0 Btu/lb _m
	@ 50 °C (122 °F)	459.62 kJ/kg	197.6 Btu/lb _m
Liquid Heat Capacity	@ 20 °C (68 °F)	1.825 kJ/(kg·K)	0.436 Btu/(lb _m ·°F)
	@ 30 °C (86 °F)	1.876 kJ/(kg·K)	0.448 Btu/(lb _m ·°F)
	@ 50 °C (122 °F)	1.976 kJ/(kg·K)	0.472 Btu/(lb _m ·°F)
Liquid Thermal Conductivity	@ 20 °C (68 °F)	0.165 W/(m·K)	0.0954 Btu/(hr·ft·°F)
	@ 30 °C (86 °F)	0.163 W/(m·K)	0.0943 Btu/(hr·ft·°F)
	@ 50 °C (122 °F)	0.158 W/(m·K)	0.0914 Btu/(hr·ft·°F)
Melting Point	- 73 °C	- 99.4 °F	
Molar Mass	102.09 g/mole		
Solubility in water	hydrolyses		
Surface Tension	@ 20 °C (68 °F)	0.0327 N/m	
	@ 30 °C (86 °F)	0.0312 N/m	
	@ 50 °C (122 °F)	0.0283 N/m	
Vapor density (Air = 1)	3.5		

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T (°F)	T (°C)	Density in Air (g/cm ³)
33.8	1	1.1030
41	5	1.0982
50	10	1.0922
59	15	1.0861
68	20	1.0801
77	25	1.0740
86	30	1.0680
95	35	1.0619
104	40	1.0559

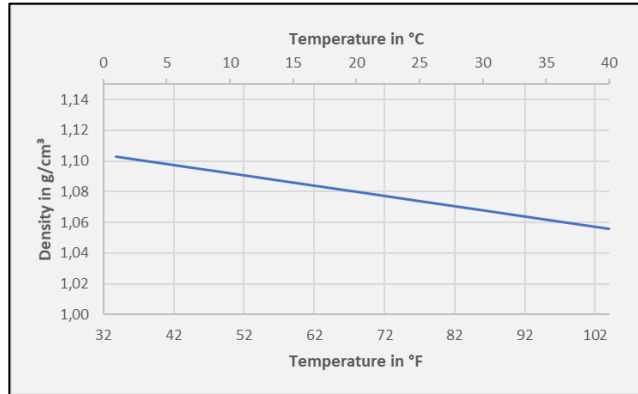


Figure 1: Density in Air as a function of Temperature

T (°F)	T (°C)	Vapor Pressure (mbar)
32	0	1.1
41	5	1.6
50	10	2.3
59	15	3.3
68	20	4.7
77	25	6.6
86	30	9.1
95	35	12.3
104	40	16.5
113	45	22.0
122	50	28.8

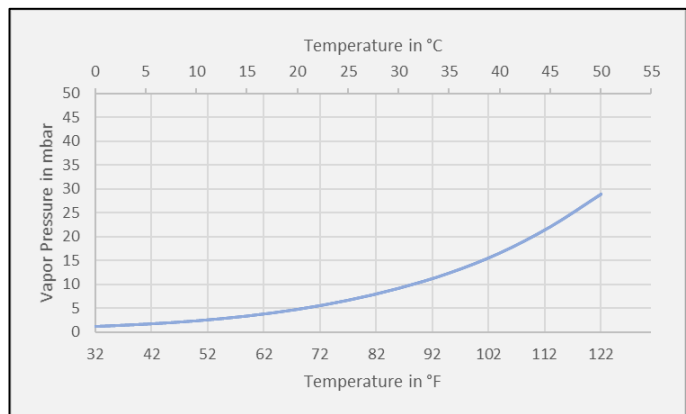


Figure 2: Vapor Pressure as a function of Temperature

T (°F)	T (°C)	Liquid Viscosity (mPa*s)
32	0	1.23
41	5	1.13
50	10	1.05
59	15	0.97
68	20	0.91
77	25	0.85
86	30	0.79
95	35	0.74
104	40	0.70
113	45	0.65
122	50	0.62

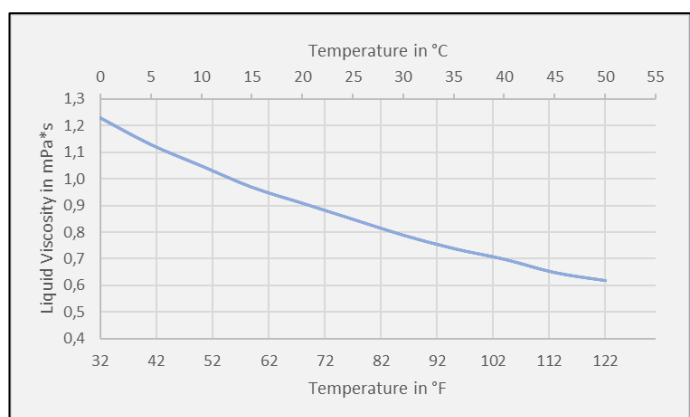


Figure 3: Liquid Viscosity as a function of Temperature

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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

- Refer to National Fire Protection Agency (NFPA) #77 "Static Electricity" or the respective national technical code for proper electrical grounding procedures.
- 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.
- 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.
- Blanketing may be used to retain quality in long-term storage conditions.
- 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 or 111A60ALW1 Tank Cars
- DOT MC 307 or DOT 407 Tank Trucks
- UN 1H1/Y1.9/150 55-Gallon High Density Polyethylene Drums
- IMO 1 ISO Tank
- Ship Tank and Barge

The Product is available from Celanese as bulk material.

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Materials of Construction

Unit / element	Acceptable Material	Alternate Material
Tank	Stainless Steel ^a	Aluminum ^b
Piping	Stainless Steel ^a	Aluminum ^b
Valves	Stainless Steel ^a	Aluminum ^b
Pumps	Stainless Steel ^a	–
Relief Valves	Stainless Steel ^a	–
Gaskets	PTFE ^d	Butyl Rubber
Pump Seals	Single Mechanical Seal: Stainless Steel / Hastelloy C-276 metallic components, Kalrez O-rings	–
Valve Packing	PTFE ^d	–
Pipe End Connections	Welded and flanged system	Threaded with PTFE ^d tape thread lubricant
Heat Exchanger	Product side: Stainless Steel ^a	–
Hoses	Stainless Steel ^a	Butyl Rubber, Hard Natural Rubber
Tank Truck	Stainless Steel ^a	Aluminum ^b
Tank Car	Stainless Steel ^a	Aluminum ^b Lined Carbon Steel ^c
ISO Tank	Stainless Steel ^a	–
Barge	Stainless Steel ^a	–
Ship Tank	Stainless Steel ^a	–

- a. Type 304 or 316 Stainless Steel at ambient temperatures. For temperatures higher than 60°C, consult a Metallurgist.
- 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. Polytetrafluoroethylene

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Product Quality Statements

Manufacturing Locations

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

- Cangrejera Plant
Carretera Coatzacoalcos-Villahermosa, Km. 12.3
96400 Coatzacoalcos
Veracruz, Mexico
- Nanjing Plant
No. 66, West Fangshui Road,
Nanjing Jiangbei New Materials High-Tech Park,
Jiangsu, China, 210047

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⁾
Acetic Anhydride ⁽²⁾	DIN 51 405 GC / ASTM E 1616 / AC2O-STD-002-EX (Celanese)
Acetic Acid	DIN 51 405 GC / ASTM E 1616 / AC2O-STD-002-EX (Celanese)
Color	DIN EN 1557 / DIN ISO 6271 / ASTM D 1209 / ASTM 5386 / AC2O-STD-003EX (Celanese)
Aluminum	Atomic Absorption Spectroscopy (AAS) / X-Ray Fluorescence Analysis by Total Reflection (TRFA) / Inductively Coupled Plasma (ICP) / AC2O-STD-005EX (Celanese)
Iron	Atomic Absorption Spectroscopy (AAS) / X-Ray Fluorescence Analysis by Total Reflection (TRFA) / Inductively Coupled Plasma (ICP) / AC2O-STD-005EX (Celanese) / ASTM E394-09

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Specifications	Analytical Methods ⁽¹⁾
Heavy Metals, as Lead	Sulfide Method / AC2O-STD-006EX (Celanese) / USP 231
Chlorides	AgNO ₃ Titration / AC2O-STD-008EX (Celanese)
Total Sulfur	ASTM D 3961 / ASTM D 6667
Permanganate Reducing Substances ⁽³⁾	GB/6324.3-2011
Non-Volatile Matter	ASTM D 1353 / DIN 53 172 / AC2O-STD-007EX (Celanese)
Specific Gravity 20 °C/20 °C	ASTM D 4052
Appearance	Visual Examination / ASTM E 2680

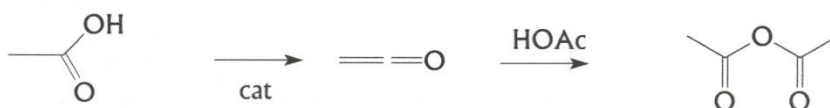
(1) Alternative equivalent methods can be used at Celanese Terminals.

(2) By difference – 100.00% minus impurities as determined by Gas Chromatography.

(3) Only applicable in China.

Manufacturing Process & Raw Materials

The Product is manufactured continuously using dedicated production units and closed equipment. Celanese produces the Product via the ketene process according to the chemical equation:



The raw material is synthetically produced Acetic Acid. No metal catalysts or metal reagents are being used in the synthesis of the Product. The crude Anhydride is purified via distillation.

Celanese supplies basic chemicals. Our production technology relies on a continuous production process. The initial basic molecules used at the beginning of the value chain 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 Acetic Anhydride, we believe that the quality properties of our products are not influenced by the trace bio-content feedstock. All catalysts and processing aids are of synthetic origin. During the manufacturing process, the material does not come into contact with materials of animal origin.

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.

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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

A Kosher grade is available in some countries. Special shipping arrangements must be made in advance. Contact your Sales Representative for more information.

Celanese supplies basic chemicals. Our production technology relies on a continuous production process. The initial basic molecules used at the beginning of the value chain 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 Acetic Anhydride, we believe that the quality properties of our products are not influenced by the bio-content feedstock. All catalysts and processing aids are of synthetic origin; we do not use any direct raw materials having an animal or dairy origin, nor is our process likely to be contaminated by such. Ethanol is not used as raw material or processing aid.

Halal

A Halal grade is available in some countries. Special shipping arrangements must be made in advance. Contact your Sales Representative for more information.

Celanese supplies basic chemicals. Our production technology relies on a continuous production process. The initial basic molecules used at the beginning of the value chain 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 Acetic Anhydride, we believe that the quality properties of our products are not influenced by the bio-content feedstock. Ethanol, fusel oil, or isoamyl alcohol are not used as raw materials or processing aids. All catalysts and processing aids are of synthetic origin; we do not use any direct raw materials having an animal, microbiological, enzymatic, human, plant, or dairy origin, nor is our process likely to be contaminated by such. The manufacturing, handling, and storage equipment are dedicated to this product.

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 not listed in the ICH Guideline Q3C(R9) for residual solvents.

The major impurity in the Product is the product of hydrolysis, Acetic Acid. Acetic Acid is listed as class 3 solvent by the ICH Guideline Q3C(R9) for residual solvents. Acetic Acid is typically contained well below the concentration limits of the guideline. Depending on the degree of hydrolysis, the content of Acetic Acid can change depending on handling and storage through our customers.

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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 is not listed in the following Regulations:

- California Proposition 65 (as of January 2025) – Impurity Acetaldehyde is listed in California Proposition 65

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 Regulation (EC) No 1223/2009 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 under the REACH regulation (Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals).

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

Celanese supplies basic chemicals. Our production technology relies on a continuous production process. The initial basic molecules used at the beginning of the value chain 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 Acetic Anhydride, we believe that the quality properties in terms of BSE/TSE are not influenced by the trace bio-content feedstock. All catalysts and processing aids are of synthetic origin; we do not use any direct raw materials having an animal or dairy origin, nor is our process likely to be contaminated by such.

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 by Celanese to the Product. The product is not verified through the Non-GMO Project Verification Program.

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Celanese supplies basic chemicals. Our production technology relies on a continuous production process. The initial basic molecules used at the beginning of the value chain 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 Acetic Anhydride, 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 (AIC)	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
- Molluscs
- 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 for them.

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

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- Aflatoxins
- Algaecide / biocide
- Alkyl phenol ethoxylates (APEO)
- 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
- Butylated hydroxytoluene (BHT)
- Coloring Agents / Dyes
- Cytokines
- Dioxins
- Epoxy compounds
- Ethylene oxide
- Flame retardants
- Fluorochemicals
- Formaldehyde and Formaldehyde releasers
- Glycol ethers
- Gold
- Hybridoma cells
- Jatropha
- Melamine
- Microplastics
- Mineral Oil Aromatic Hydrocarbons (MOAH)
- Mineral Oil Saturated Hydrocarbons (MOSH)
- Monoclonal antibodies
- Nanomaterials
- 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)
- Per- and polyfluoroalkyl substances (PFAS)¹
- Pesticides
- Phosphates
- Phthalates
- Pigments
- Plasticizers
- Polybrominated substances
- Polychlorinated substances
- Polyvinyl chloride (PVC)
- Protein subunits
- Radioactive substances
- Sewer sludge
- Silicones
- Subunit vaccines from in-vitro cell culture
- Tantalum
- Tin
- Triclosan
- Tris (nonylphenyl) phosphite
- Tungsten
- Viral vectors and Viral vector derived products

¹ 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

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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.

FDA citations: Acetic Anhydride itself is not listed in 21CFR as an approved food contact material or in 40CFR as an approved inert in agriculture applications. Acetic Anhydride is listed in 21CFR 172.892 as an allowed starch modifier.

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 acetic anhydride 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	232
(2)	Ref. No	10150 30280
(3)	CAS No	0000108-24-7
(4)	Substance name	acetic anhydride
(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 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

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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.	442
2	Bezeichnung des Stoffes	Acetic anhydride
3	CAS-Nr.	0000108-24-7
4	Verpackungsmaterial-Referenz-Nr. der Europäischen Kommission für den Stoff	10150 30280
5	Verwendung als Monomer oder als anderer Ausgangsstoff oder als durch mikrobielle Fermentation gewonnenes Makromolekül	M
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 Konformitätsprüfung	

Annex 10

1	Nr.	442
2	Bezeichnung des Stoffes	Acetic anhydride
3	CAS-Nr.	0000108-24-7
4	Ref-Nr.	10150 30280
5	Verwendung	M, AD
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: 15th April 2024

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 %)

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- 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

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Attachment I: Sales Specifications

Global

Acetic Anhydride

CAS-No. 108-24-7

Sales Specification

Specifications ⁽¹⁾		Limit	Unit
Acetic Anhydride ⁽²⁾	min.	99.50	wt. %
Acetic Acid	max.	0.50	wt. %
Aluminum	max.	1	ppm
Iron	max.	1	ppm
Heavy Metals, as Lead	max.	1	ppm
Chlorides	max.	1	ppm
Total Sulfur	max.	1	ppm
Nonvolatile Matter	max.	0.003	g/100 ml
Permanganate Time	min.	10	minutes
Color	max.	10	Pt-Co
Specific Gravity 20°C/20°C	-	1.080 – 1.0840	-
Appearance	-	CFSM ⁽³⁾	-

(1) Test methods available upon request.

(2) By difference – 100.00% minus impurities as determined by Gas Chromatography.

(3) Clear and Free from Suspended Matter.

Product Number: 50000437

Spec. AC2O-001-Global-Jun25

Supersedes: Global Spec AC2O-001, Nov 2016 / EAME Spec 50000437, Version 3, Nov 15, 2016.

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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 warranting 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 Safety Data Sheets (SDS) 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.

Acetic Anhydride

Product Quality, Regulatory & Technical Information Package

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China

Acetic Anhydride (China)

CAS-No. 108-24-7

Sales Specification

Specifications ⁽¹⁾		Limit	Unit
Acetic Anhydride ⁽²⁾	min.	99.50	wt. %
Acetic Acid	max.	0.500	wt. %
Aluminum	max.	1.0	ppm
Iron	max.	1.0	ppm
Heavy Metals, as Lead	max.	1.0	ppm
Chlorides	max.	1.0	ppm
Total Sulfur	max.	1.0	ppm
Nonvolatile Matter	max.	0.003	g/100 ml
Permanganate Time	min.	10	minutes
Color	max.	10.0	Pt-Co
Permanganate-Reducing Substances	max.	60	mg/100 ml
Appearance	-	CFSM ⁽³⁾	-

(1) Test methods available upon request.

(2) By difference – 100.00% minus impurities as determined by Gas Chromatography.

(3) Clear and Free from Suspended Matter.

Product Number: 50000437
 Spec. AC20-001-China-Jun25
 Supersedes: Nov-2015

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