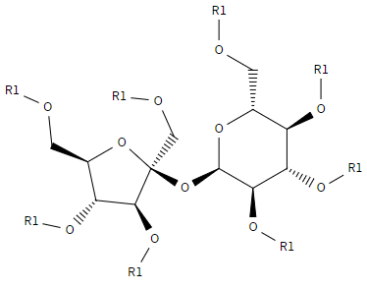
Sucrose Acetate Isobutyrate (SAIB) 80 %
Product Quality, Regulatory & Technical Information Package

June 2025

Product Name:	**Sucrose Acetate Isobutyrate (SAIB) 80 %**
Chemical Name:	Sucrose, mixed acetate and isobutyrate octaesters, 80 % solution in Ethyl Acetate
EC number:	701-290-8
Celanese (bulk) Material number:	50000927

The Product is only available from Celanese as packed goods in IBC.



R1: Acetyl or 2-Methyl-1-oxo-propyl

Disclaimer

Celanese is supplying Sucrose Acetate Isobutyrate (SAIB) 80 % as a technical grade product.

This document provides information about technical grade Sucrose Acetate Isobutyrate (SAIB) 80 % ("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.

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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

Sucrose Acetate Isobutyrate is a high purity carbohydrate. This sugar derivative, produced by esterification of natural sugar with Acetic and Isobutyric Anhydride, is a mixture of different isomers.

Sucrose Acetate Isobutyrate 80 % is a 80 % solution of Sucrose Acetate Isobutyrate with 20 % Ethyl Acetate (Ethyl Acetate purity of min. 99.7 %).

Sucrose Acetate Isobutyrate can be used for a wide range of applications. Major areas are inks, coatings and paper production. Common literature describes also the use in beverages and controlled-release formulations for pharmaceuticals.
Sucrose Acetate Isobutyrate is employed as a modifier-extender leading to higher solids extending the film-forming polymer. The hardness of cellulose-nitrate films can be increased by the addition of Sucrose Acetate Isobutyrate. Flow properties are often improved and surface imperfections can be reduced.

At more relevant temperatures the sucrose ester may serve as a plasticizer e.g. in printing inks for food packaging foils to improve adhesion and heat stability.

Sucrose Acetate Isobutyrate´s advantageous features for coatings and inks may be:

- Low volatility of pure Sucrose Acetate Isobutyrate, resulting in higher solids content
- Low color
- Compatibility with most polymers and resins, oils and waxes

Sucrose Acetate Isobutyrate can also be added to hot-melt adhesives and coatings which are used to package items such as table flatware, tolls, machine parts, etc. The sucrose ester may lower the coating temperature and appears to have a stabilizing influence on the total hot-melt coatings. In such applications it may exhibit good color retention and stability on heat aging.

Sucrose Acetate Isobutyrate can help efficiently to disperse pigments. The ester can support the formation of stable suspensions with good compatibility with binder resins in coating materials and inks.

For the production of papers it serves as a clarifier and transparentizing agent due to a similar refractive index to cellulose fibers. It may increase the stability of the paper to heat and light as well as transparency and printability of the paper. The paper is usually impregnated or coated with a solution of Sucrose Acetate Isobutyrate in a low boiling solvent, such as an alcohol.

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 @1013 hPa (14.69 psi)		>104 °C	>219 °F
Density @20 °C (68°F)		1.07 – 1.09 g/cm³	8.93 – 9.10 lb/gal
Molar Mass ($C_{40}H_{62}O_{19}$)		846 g/mole	
Refractive Index n_D^{40} (104 °F)		1.44	
Vapor Pressure	@20 °C (68 °F)	58 hPa	0.84 psia
	@50 °C (122 °F)	201 hPa	2.92 psia
Viscosity @20 °C (68 °F) (DIN 53 211-4)		16 – 23 DIN-sec	
Water solubility @20 °C (68 °F)		insoluble	

Storage and Handling Recommendations

Storage

Recommended Blanketing	Air[a,b] or Dry Nitrogen[a,b,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.
- 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]
Piping	Carbon Steel	Stainless Steel [a]
Valves	Carbon Steel	Stainless Steel [a]
Pumps	Cast Iron, Carbon Steel	Stainless Steel [a]
Relief Valves	Carbon Steel	Stainless Steel [a]
Gaskets	Glass filled PTFE [c]	PTFE [c]
Pump Seals	Single Mechanical Seal: Stainless Steel / Hastelloy C-276 metallic components, Kalrez O-rings	–
Valve Packing	PTFE [c]	Braided PTFE [c]
Pipe End Connections	Welded and flanged system	Threaded with PTFE [c] tape
Heat Exchanger	Product side: Stainless Steel [a]	Product side: Carbon Steel
Hoses	Stainless Steel [a]	-
Tank Truck	Stainless Steel [a]	-

a. Type 304 or 316 Stainless Steel
b. Lining refers to high baked phenolic resin
c. Polytetrafluoroethylene

Product Quality Statements

Manufacturing Locations

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

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

ISO Certification

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

Specification

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

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

Analytical Methods

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

Specifications	Analytical Methods [1]
Assay ($C_{40}H_{62}O_{19}$)	DIN 53 401
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 chemically synthesized through the esterification of Sucrose (Natural Sugar) with Acetic Anhydride and Isobutyric Anhydride:

Sucrose + Acetic Anhydride + Isobutyric Anhydride → Sucrose Acetate Isobutyrate + Isobutyric Acid

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

The Acid Anhydride is completely consumed, the resulting Isobutyric Acid is distilled off. The Product is washed with Water and Ethyl Acetate and dried afterwards.
Subsequently the dilution to 80 % with Ethyl Acetate is produced:

Sucrose Acetate Isobutyrate + Ethyl Acetate → Sucrose Acetate Isobutyrate 80 % in Ethyl Acetate

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

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 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.

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

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.

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.

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

- 2,4,6-Tris(tert-butyl)phenol (2,4,6-TTBP)
- Aflatoxins
- Algaecide / biocide
- Alkyl phenol ethoxylates (APEO)
- Anti-oxidants, such as BHT, BHA, TNPP
- 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
- 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)
- 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)
- 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

[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

- Monoclonal antibodies
- Nanomaterials per US EPA definition
- 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.

Volatile Organic Compounds (VOC)

Status: 21st January 2021

The Product fulfills the criteria and is considered a VOC (based on Ethyl Acetate content) according to

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

Attachment I: Sales Specifications

Celanese
The chemistry inside innovation™

Sucrose Acetate Isobutyrate 80 % (SAIB, 80 % solution in Ethyl Acetate) EC-No. 701-290-8

Sales Specification

Specifications (1)		Limit	Unit
Assay ($C_{40}H_{62}O_{19}$) (2)	min.	98.8 – 101.9	wt. %
Acid Number	max.	0.5	mg KOH/g
Color	max.	300	Pt-Co
Appearance	-	Yellowish liquid	-

(1) Test methods available upon request.
(2) Without Ethyl Acetate

Product Numbers: 50000927

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

Spec. SAIB80-001-Global-Jun25

Supersedes: SAIB80_50000927_SLS_e_V4 of November 30, 2022 (Version-No. 4)

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