

TERT BUTYL ACETATE

Gen. Variant: SDS_US_GHS

Version 1.4

Revision Date 11/22/2019

Print Date 08/04/2021

SDS No.: BE2458

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Trade name : TERT BUTYL ACETATE
CAS Number: : 540-88-5
Chemical characterization : Organic Ester
Chemical name : Acetic Acid, tert-butyl ester
Synonyms : Tertiary butyl Acetate; Acetic Acid, 1,1-Dimethylethyl ester;
1,1-Dimethyl acetate

Identified uses : Solvent

Prohibited uses : Automotive (motor vehicle) fuels

Company Address

Alliance Chemical
204 South Edmond St
Taylor, Texas, 76574

Company Telephone

5 1 2 - 3 6 5 - 6 8 3 8

Emergency telephone number

CHEMTEL: (800) 255-3924

E-mail address : Alliance@alliancechemical.com
Responsible/issuing person

2. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquids	Category 2
Acute toxicity; Inhalation	Category 4
Specific target organ toxicity - single exposure	Category 3
Short-term (acute) aquatic hazard	Category 3

Label elements

Hazard symbols :



Signal word : Danger

Hazard Statements : H225 Highly flammable liquid and vapour.

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H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H402 Harmful to aquatic life.

Precautionary Statements

: Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

Storage

P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

Hazards Not Otherwise Classified (HNOC)
Repeated exposure may cause skin dryness or cracking.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Chemical nature : Substance

Components

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Chemical name	CAS-No. EC-No.	Weight %	Component Type
Tert-Butyl acetate	540-88-5	> 99.5 %	A
t-Butyl Alcohol	75-65-0	<0.5 %	C
2,4,4-Trimethyl-1-pentene	107-39-1	<0.5 %	C

Key:

(A) Substance

(C) Impurity

4. FIRST AID MEASURES

- General advice : Consult a physician/doctor if necessary.
Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid.
Show this material safety data sheet to the doctor in attendance.
- If inhaled : If overcome by exposure, remove victim to fresh air immediately.
Give oxygen or artificial respiration as needed.
Call a physician.
- In case of skin contact : Remove contaminated clothing as needed.
Wash skin thoroughly with mild soap and water.
Flush with lukewarm water for 15 minutes.
If sticky, use waterless cleaner first.
Seek medical attention if ill effect or irritation develops.
- In case of eye contact : Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.
- If swallowed : If large quantity swallowed, give lukewarm water (pint/ 1/2 liter) if victim completely conscious/alert.
Do not induce vomiting. Risk of damage to lungs exceeds poisoning risk.
Obtain emergency medical attention.

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Notes to physician

- Symptoms : If inhalation occurs signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath and/or fever.
High doses may cause CNS depression (fatigue, dizziness and possibly loss of concentration, with collapse, coma and death in cases of severe over-exposure).
The onset of respiratory symptoms may be delayed for several hours after exposure.
- Hazards : May be harmful if swallowed and enters airways.
May be harmful if swallowed.
Harmful if inhaled.
May cause respiratory irritation.
May cause drowsiness or dizziness.
- Treatment : Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : SMALL FIRE: Use dry chemicals, CO2, water spray or alcohol-resistant foam. LARGE FIRE: Use water spray, water fog or alcohol-resistant foam.
- Unsuitable extinguishing media : Do not use solid water stream - may spread fire.
- Specific hazards during fire fighting : Releases flammable vapors below normal ambient temperatures.
When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined.
Flammable vapors may be heavier than air and travel long distances along the ground before igniting and flashing back to vapor source.
Move containers from fire area if it can be done without risk.
Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
Cool containers with flooding quantities of water until well after fire is out.
Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
Always stay away from tanks engulfed in fire.
For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

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Special protective equipment for fire-fighters : Wear positive pressure self-contained breathing apparatus (SCBA).
Structural firefighter's protective clothing will only provide limited protection.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
For safety reasons in case of fire, cans should be stored separately in closed containments.
Use a water spray to cool fully closed containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods for containment /
Methods for cleaning up : Extremely flammable.
Eliminate all sources of ignition.
All equipment used when handling this product must be grounded.
Do not touch or walk through spilled material.
Stop leak if you can do it without risk.
Prevent entry into waterways, sewers, basements or confined areas.
A vapor suppressing foam may be used to reduce vapors.
Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
Use clean non-sparking tools to collect absorbed material.
Dike large spills and place materials in salvage containers.
Water spray may reduce vapor; but may not prevent ignition in closed spaces.

Additional advice : See section 8 for additional PPE information.

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7. Handling and storage

Precautions for safe handling

Advice on safe handling : Use only non-sparking tools.
Extinguish all ignition sources.
Carefully vent any internal pressure before removing closure.
Containers must be properly grounded before beginning transfer.
Handle empty containers with care; vapor/residue may be flammable.
All equipment must conform to applicable electrical code.
This material may attack some forms of plastics, rubbers, and coatings.
Isolate, vent, drain, wash and purge systems or equipment before maintenance or repair.
Check atmosphere for explosiveness and oxygen deficiencies.
Wear recommended personal protective equipment.
Observe precautions pertaining to confined space entry.
Do not breathe vapors or spray mist.

Advice on protection against fire and explosion : Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Take precautionary measures against static discharge.

Fire-fighting class : OSHA/NFPA Class IB Flammable Liquid.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store closed drums with bung in up position.
Store only in tightly closed, properly vented containers away from heat, sparks, open flame and strong oxidizing agents.
Containers must be properly grounded before beginning transfer.
This material may attack some forms of plastics, rubbers, and coatings.
Consult supplier(s) of these materials for specific recommendations.
Steel drums are recommended for packaging.

Specific end use(s)

: See Section 1.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Ingredients with workplace control parameters

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Occupational Exposure Limits

Components	CAS-No.	Type	Limit Value	Basis Revision Date	Additional Information
Tert-Butyl acetate	540-88-5	IDLH	1,500 ppm	NIOSH September 2007	
Remarks: 10% LEL					
Tert-Butyl acetate	540-88-5	TWA	200 ppm 950 mg/m ³	US (OSHA) June 23, 2006	
t-Butyl Alcohol	75-65-0	TWA	100 ppm	US (ACGIH) 2012	
t-Butyl Alcohol	75-65-0	IDLH	1,600 ppm	NIOSH September 2007	
t-Butyl Alcohol	75-65-0	TWA	100 ppm 300 mg/m ³	US (OSHA) June 23, 2006	

Consult local authorities for acceptable exposure limits.

Exposure controls**Engineering measures**

Both local exhaust and good general room ventilation must be provided not only to control exposure but also to prevent formation of flammable mixtures.

Personal protective equipment

- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Hand protection : Wear chemical resistant gloves such as:
Butyl rubber.
- Eye and face protection : Use splash goggles when eye contact due to splashing or spraying liquid is possible.
- Skin and body protection : Depending on the conditions of use, protective gloves, apron, boots, head and face protection should be worn.
The equipment must be cleaned thoroughly after each use.
- Hygiene measures : Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use.
Emergency eye wash fountains and safety showers should be

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available in the immediate vicinity of any potential exposure.
Use good personal hygiene practices.
Wash hands before eating, drinking, smoking, or using toilet facilities.
Wash clothing frequently.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Color	: Clear, colorless.
Odor	: Camphor-like odor.
Odor Threshold	: 8 ppb
Flash point	: 4 °C at 1013.0 hPa (759.8 mm Hg)
Ignition temperature	: 589 °C at 1,013 hPa
Lower explosion limit	: ~ 1.26 vol%
Upper explosion limit	: ~ 6.88 vol%
Flammability (solid, gas)	: Not applicable
Oxidizing properties	: Not considered an oxidizing agent.
Autoignition temperature	: 589 °C at 1,013 hPa
Molecular weight	: 116.16 g/mol
Decomposition temperature	: not determined
pH	: 6 - 7
Melting point/freezing point	: -58.15 °C at 1,013 hPa
Boiling point/boiling range	: 97.8 °C at 1,013 hPa
Vapor pressure	: 55.995 hPa at 20 °C
Density	: 0.86 g/cm ³

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	at 25 °C
Water solubility	: 7,820 mg/l 23 °C
Partition coefficient: n-octanol/water	: log Pow: 1.64 at 21.7 °C
Viscosity, dynamic	: < 1 mPa.s at 25 °C
Viscosity, kinematic	: < 1 mm ² /s
Relative vapor density	: No Data Available.
Evaporation rate	: 2.8 (butyl acetate = 1)
Explosive properties	: Not explosive
Other Information	: Additional properties may be listed in Sections 2 and 5.

10. STABILITY AND REACTIVITY

Reactivity	: Will not occur.
Chemical stability	: Stable under recommended storage conditions.
Hazardous reactions	: Not expected to occur.
Conditions to avoid	: Heat, sparks, open flame, other ignition sources, and oxidizing conditions.
Materials to avoid	: Some plastics. Acids. Alkalies. Nitrates. Strong oxidizing agents.
Hazardous decomposition products	: Under hot, acidic conditions, the decomposition products are isobutylene and acetic acid.
Thermal decomposition	: Carbon oxides (CO, CO ₂), Water.

11. TOXICOLOGICAL INFORMATION

Product Summary	: The below given information is based on the assessment of the product including impurities.
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Acute toxicity

Acute oral toxicity

- : Based on acute toxicity values, not classified.
May be harmful if swallowed.
- : High doses may cause CNS depression (fatigue, dizziness and possibly loss of concentration, with collapse, coma and death in cases of severe over-exposure).
- : LD50 Oral: 4,500 mg/kg

Acute inhalation toxicity

- : Classified
Harmful if inhaled.
- : High vapor concentrations may cause CNS stimulation (increased activity, shaking, tremors) and/or depression (fatigue, dizziness, and possibly loss of concentration, with collapse, coma and death in cases of severe over-exposure).
- : LC50: 12.52 mg/l
Exposure time: 4 HOURS
Method: Calculation method

Acute dermal toxicity

- : Based on acute toxicity values, not classified.
- : LD50 Dermal: > 2,000 mg/kg

Skin corrosion/irritation

- : Based on skin irritation values, not classified.
- : May cause slight transient skin irritation.
- : Repeated exposure may cause skin dryness or cracking.

Serious eye damage/eye irritation

- : Based on eye irritation values, not classified.
- : Moderate eye irritation

Respiratory or skin sensitization

- : Respiratory sensitization
Not classified
No study available.
- : Skin sensitization
Not classified
No adverse effect observed.

Chronic toxicity

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- Target Organ Systemic Toxicant - Single exposure** : Classified, May cause respiratory irritation., May cause drowsiness or dizziness.
- : Exposure routes: Inhalation, Ingestion
Target Organs: Central nervous system, Respiratory system
- Target Organ Systemic Toxicant - Repeated exposure** : Based on repeated exposure toxicity values, not classified.
- Aspiration hazard** : Not classified
May be harmful if swallowed and enters airways.

12. Ecological information

Ecotoxicology Assessment

- Short-term (acute) aquatic hazard** : Classified, Harmful to aquatic life.
- Long-term (chronic) aquatic hazard** : Not classified, based on readily biodegradability and low acute toxicity.
- Toxicity to fish** : Low acute toxicity to fish
- Toxicity to daphnia and other aquatic invertebrates** : Low acute toxicity to aquatic invertebrates.
- Toxicity to algae** : Harmful to algae.
Can inhibit growth of aquatic algae
- : EC50: 16 mg/l
Exposure time: 72 HOURS
Species: Pseudokirchneriella subcapitata (green algae)
Test type: Growth inhibition
- : EC50: 64 mg/l
Exposure time: 96 HOURS
- : NOEC: 2.3 mg/l
- Toxicity to bacteria** : High concentrations may be harmful to sewage treatment plant microbes
- : 1.5 mg/l

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Species: Activated sludge
Test type: Respiration inhibition

Toxicity to fish (Chronic toxicity) : no data available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : no data available

Persistence and degradability

Biodegradability : Biodegradation: 50 %
Inherently biodegradable.
(After 28 days in a ready biodegradability test)

Stability in water

tert-butyl acetate : Hydrolyzes slowly.

tert-butyl alcohol : Hydrolytically stable.

Stability in soil

tert-butyl acetate : Low potential for soil adsorption expected

tert-butyl alcohol : Low potential for soil adsorption expected

2,4,4-trimethylpent-1-ene : Expected to have moderate mobility in soils.
Volatilization from moist soil surfaces is expected to be an important fate process of this material.
The potential for volatilization from dry soil surfaces may exist.
Not likely to adsorb to suspended solids and sediment in water.

Bioaccumulative potential

Bioaccumulation : Bioconcentration factor (BCF): 6.7
This material is not expected to bioaccumulate.

Mobility in soil

Distribution among environmental compartments

tert-butyl acetate : Released material would be expected to show high soil mobility and to volatilize readily from soil and surface waters, forming atmospheric vapor.

Other adverse effects

Environmental fate and pathways : No additional information available.

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Other information

Additional ecological information : No additional information available.

13. Disposal considerations

Waste treatment methods

Product : Contaminated product, soil, water, container residues and spill cleanup materials may be hazardous wastes.
Comply with applicable federal, state, and local regulations.

14. TRANSPORT INFORMATION

CFR_ROAD

UN number : 1123
Description of the goods : BUTYL ACETATES
Class : 3
Packing group : II
Labels : 3

Marine pollutant : no

CFR_RAIL

UN number : 1123
Description of the goods : BUTYL ACETATES
Class : 3
Packing group : II
Labels : 3

Marine pollutant : no

IMDG

UN number : 1123
Description of the goods : BUTYL ACETATES
Class : 3
Packing group : II
Labels : 3

EmS Number 1 : F-E

EmS Number 2 : S-D

Marine pollutant : no

BLG (MARPOL Annex II)

Description of the goods : BUTYL ACETATE (ALL ISOMERS)

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Pollution category : Y
Ship type : 3

IATA

UN number : 1123
Description of the goods : BUTYL ACETATES
(Tert-Butyl acetate)
Class : 3
Packing group : II
Labels : 3

15. REGULATORY INFORMATION

TSCA 12b

No substances are subject to TSCA 12(b) export notification requirements.

Significant New Use Rules (SNUR)

No substances are subject to a Significant New Use Rule.

SARA 302/304

The following substance(s) is/are regulated under SARA 302/304:

Component	CASRN	TPQ	RQ
Tert-Butyl acetate	540-88-5		5000 lbs

SARA 311/312

Based upon available information, this material is classified as the following health and/or physical hazards according to Section 311 & 312:

Flammable (gases, aerosols, liquids, or solids) Acute toxicity (any route of exposure) Specific target organ toxicity (single or repeated exposure) Hazard not otherwise classified (health hazards)

SARA 313

This product contains no known chemicals regulated under SARA 313.

State Reporting

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This material does not contain listed substance(s) known to the State of California to cause cancer, birth defects, or other reproductive harm that would require warning under the California Proposition 65 State Drinking Water and Toxic Enforcement Act.

However, Alliance Chemical has not tested for the presence of listed chemical substances.

This product contains the following chemicals regulated by New Jersey's Worker and Community Right to Know Act:

540-88-5 Tert-Butyl acetate

This product contains the following chemicals regulated by Massachusetts' Right to Know Law:

540-88-5 Tert-Butyl acetate

This product contains the following chemicals regulated by Pennsylvania's Right to Know Act:

540-88-5 Tert-Butyl acetate

75-65-0 t-Butyl Alcohol

Other international regulations

Global Inventory Status

The ingredients of this product are compliant with the following chemical inventory requirements or exemptions.

*Additional Explanatory Status Statements follow the table, as necessary.

Country/Region	Inventory	Status Description
Australia	AICS	Compliant
Canada	DSL	Compliant
China	IECSC	Compliant
Europe	REACH	See REACH Compliance Statement
Japan	ENCS	Compliant
Korea	KECI	Compliant
New Zealand	NZIoC	Compliant
Philippines	PICCS	Compliant
United States of America	TSCA	Compliant
Taiwan	TCSCA	Compliant

REACH status

If the product has been purchased from any company of the LyondellBasell group of companies registered in the European Union, we confirm that the chemical substance in this product has been registered under REACH, in accordance with the deadlines set forth in REACH. (Regulation (EU) No. 1907/2006)

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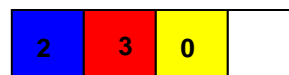
SDS No.: BE2458

16. OTHER INFORMATION

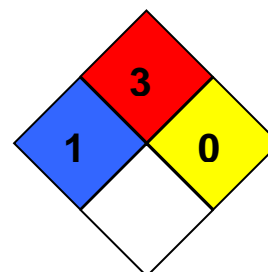
Material safety datasheet sections which have been updated:

Revised Section(s): 15 16

HMIS Classification : Health Hazard: 2
Flammability: 3
Physical hazards: 0



NFPA Classification : Health Hazard: 1
Fire Hazard: 3
Instability: 0



Further information

HMIS rating scale (0 = minimal hazard; 4 = severe hazard)

NFPA rating scale (0 = minimal hazard; 4 = severe hazard)

Disclaimer

Information in this document is accurate to the best of our knowledge at the date of publication. The document is designed to provide users general information for safe handling, use, processing, storage, transportation, disposal and release and does not constitute any warranty or quality specification, either express or implied, including any warranty of merchantability or fitness for any particular purpose. Users shall determine whether the product is suitable for their use and can be used safely and legally.

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Numerical Data Presentation

The presentation of numerical data, such as that used for physical and chemical properties and toxicological values, is expressed using a comma (,) to separate digits into groups of three and a period (.) as the decimal marker. For example, 1,234.56 mg/kg = 1 234,56 mg/kg.

Language Translations

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The information presented in this document has been translated from English by a vendor Alliance Chemical believes to be reliable. Alliance Chemical and its vendor have made a good-faith effort to verify the accuracy of the translation, but assume no liability or other responsibility for any errors that may have occurred. Please refer to our web site (www.lyondellbasell.com) for the original document written in English.

End of Material Safety Data Sheet