



Material Safety Date Sheet (MSDS)

10. Stability and Reactivity

Stability	Stable
Avoid to Mix with	Strong oxides, strong acids and bases
Hazardous Polymerization	Not polymerize

11. Toxicological Information

Acute Toxicity	Oral	LD50	4100mg/kg(rat)
	Skin	LD50	> 2000mg/kg(rbt)
	Ingestion	LC50/4H	> 2230mg/m ³ /4h(rat)
Irritating	Human eyes:	Cause irritation 300ppm(3rd class)	
	Rabbit skin:	500 24h, Mild irritation	
	Rabbit eyes:	100, Mild irritation	
Other	This product is identified as non-VOC solvents by U.S. Environmental Protection Agency (EPA).		

12. Ecological Information

Ecotoxicity	IC50: 420ml/L(72h)(Alga)
Non-biodegradable	In the air, when the hydroxyl radical concentration is 5.00*10 ⁵ /cm ³ , degradation half-life is 29d(in theory)

13. Disposal Considerations

Nature of Wastes	Hazardous Wastes
Wastes Disposal Methods	Incineration
Waste Note	In accordance with national and local laws and regulations before disposal

14. Transport Information

Dangerous goods No.	32130
UN	1123
Customs Code	2915390090
Packaging Signs	Flammable liquid
Hazards Sign	F
Class No	3
Dangerous Goods	7
Packaging Signs	
Packing Group	O52
Packaging	200L galvanized iron drum, 200L Polyethylene plastic barrel, ISO-TANK
Transport Information	Vehicles carrying the goods must be equipped with exhaust pipe fire stopping device, using mechanical equipments and tools that easily produce sparks to load and unload is strictly forbidden. Road transportation should according to the rules, do not to stay in the residential areas and densely populated areas. During the railway transportation, do not stop without braking. Forbidden to use wooden, cement boats to transport in bulk.

15. Regulatory Information

National Chemical Safety Regulations	Chemical Dangerous Goods Safety Management Regulations (The 52nd State Council Executive Meeting, January 9, 2002); Safety Production License Regulations (The 34th State Council Executive meeting, January 7, 2004); Hazardous Materials Safety Regulations to Implement Rules (Labor [1992] No. 677); The Workplace Safe Use of Chemicals ([1996] Ministry of Labor No. 423) and other regulations; Commonly Used Classification of Dangerous Chemicals and Signs (GB13690-92). The material is classified as 3.2 class flash point flammable liquids.
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16. Disclaimer

This document is generated for the purpose of distributing health, safety, and environmental data. Information is correct to the best of our knowledge at the date of the publication. It is not a specification sheet nor should any displayed data be construed as a specification.

The information on this document was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself.

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If the product is used as a component in another product, this information may not be applicable.

17. References

Filing Date	2011-8-1
Filing Department	Yueyang Fuhe Technology Co., Ltd

18. Contact Us

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Material Safety Date Sheet (MSDS)



FUHE TECHNOLOGY

YUEYANG FUHE TECHNOLOGY CO., LTD.



Material Safety Date Sheet (MSDS)

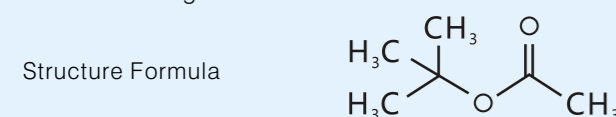
1. Chemical Product and Company Identification

Product Name	tert-butyl acetate
Synonyms	acetic acid 1,1-dimethylethylester acetic acid tert-butyl ester TBAC t-butyl acetate acetic acid t-butyl ester
Company Name	Yueyang Fuhe Technology Co., Ltd
Company Address	Yueyang County Eco-industrial Park, Yueyang County, Hunan, China
Post Code	414100
Telephone	86-730-3218888
Fax	86-730-3218888
E-mail	sales@yfyuhe.com
Technical Specification Code	YYFH-11001 1-08-01
Effective Date	40756
National Emergency Tel.	86-731-22381777

2. Composition/Information on Ingredients

Main Ingredients	Quality Index	Test Methods
TBAC content	≥99.5%	Q/JBSQ 001-2010
Alkanes content	≤0.2%	Q/JBSQ 001-2010
Alcohols content	≤0.2%	Q/JBSQ 001-2010
Water content	≤0.05%	Q/JBSQ 001-2010
Acidity (as acetic acid)	≤0.05%	Q/JBSQ 001-2010
Evaporates	≤0.002%	Q/JBSQ 001-2010
Eye-measurement	≤10	Q/JBSQ 001-2010

Molecular Formula	C ₆ H ₁₂ O ₂ ; CH ₃ COOC(CH ₃) ₃
Molecular Weight	116.16
EINECS No.	208-760-7
RTECS No.	AF7400000
IMDG Encoding Rules	3191



CAS No.	540-88-5
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3. Hazards Summarizing

Hazards Identification	F
Hazards Class	R11, R66
Safety Instructions	S16, S23, S25, S29, S33
Routes of Invasion	Inhalation, ingestion
Health Hazards	Slight skin irritant. Moderate eye irritant. High vapor concentrations may cause stimulation (increased activity, shaking, tremors) and/or depression (fatigue, dizziness and possible loss of concentration, with collapse, coma and death in cases of severe over-exposure)
Explosion Hazard	Mix with air can be explosive. Highly flammable in case of fire, high temperature, oxidizer; Burning produces irritant fumes

4. First-aid Measures

Eyes	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.
Skin	Remove contaminated clothing as needed. Wash skin thoroughly with mild soap water. Flush with lukewarm water for 15 minutes. If sticky, use waterless cleaner first. Seek medical attention if ill effect or irritation develops.
Ingestion	If large quantity swallowed, give lukewarm water (pint/1/2 litre) if victim completely conscious/alert. Do not induce vomiting. Risk of damage to lungs exceeds poisoning risk. Obtain emergency medical attention.
Inhalation	If overcome by exposure, move victim to fresh air immediately. Give oxygen or artificial respiration as needed. Seek medical attention.

5. Fire-fighting Measures

Hazardous Characteristics	Flammable, its vapor can form explosive mixtures with air. Near fire, high heat will cause a burning explosion. Strongly react with oxides. The vapor is heavier than air and can spread to the lower department of considerable local, a fire source will fire back.
Hazardous Combustion Products	CO, CO ₂
Measures	Use foam, CO ₂ , dry chemicals, or sands. Water can cool containers in the fire, but unable to extinguish the fire.
Fire Fighting Guidance	Fire-fighters must wearing SCBA (self-contained breathing apparatus), fire protective body suits. Move containers away from the fire area to open space if no risk. Cooling containers with water spray until fire is put out. In case of rising sound from venting safety devices, discoloration of tank, withdraw immediately from the area and let the fire burn.

6. Accidental Release Measures

Extremely flammable. Eliminate all source of ignition. All equipment used when handling this product must be grounded. Do not touch or walk through spilled material. Stop the 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.

7. Handling and Storage

Operation	Production process is airtight, overall ventilation. The operator must go through a specialized training, strict adherence to the rule of operation. Operators should wear self-absorption filter respirators (half-mask), wear antistatic overalls, and rubber gloves. Away from fire, heat. No smoking in the workplace. Use explosion-proof ventilation systems and equipments. Avoid vapor to leak into the air of workplace and to contact with oxidizers, acids, alkalis. The flow rate should be controlled while filling, and there should have grounding device to prevent accumulation of static electricity. Care pack and unload while transporting to avoid damages of the packaging and containers. Emergency equipment are needed to handle leaking and fire. Empty containers may have harmful residue.
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Storage	Products should store in a cool, dry and ventilated warehouse, keep distance from fire and heat. The temperature of the warehouse should not exceed 30°C. Keep the container sealed for the strongly water absorption of products. Use immediately after opening. With the oxidizers, acids, alkalis, should separate and avoid mixing storage. Use explosion-proof type lighting, ventilation. Using mechanical equipments and tools that easily produce sparks is forbidden. Storage areas should be provided with leak emergency response equipment and suitable host material.
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8. Exposure controls/personal protection

Occupational Exposure standard	TWA 950 mg/m ³ ; STEL 1210 mg/m ³
Engineering Controls	Production process is airtight, overall ventilation. Provide safety shower and eyewash equipment.
Respiratory protection	Possible exposure to vapor, should wear self-absorption filter respirators (half mask). Emergency rescue or evacuation, it is recommended to wear air respirator.
Eyes protection	Wear protective chemical safety glasses.
Body protection	Wear anti-static overalls.
Hands protection	Wear rubber oil resistant gloves.
Other protection	Smoking is forbidden. Shower and dressing after work. Attention to personal hygiene.

9. Physical and Chemical Properties

Appearance and Character	Colorless transparent liquid with fruit flavor.
Melting Point (°C)	-62
Boiling Point (°C)	98
Relative Density (20°C Water=1)	0.860~0.866g/cm ³
Relative Vapor Pressure (Air=1)	4
Saturated Vapor Pressure (25°C)	6.3MPa
Maximum Increment Reactivity	0.20g Ozone/gTBAC
PH	6~7
Water solubility	0.8% (@20°C)
Odor Threshold	71ppb
Refractive Index	n ₂₀ /D ₁ .386(lit)
Dielectric Constant 20°C	1.94
Solubility Parameter	7.7
Critical Pressure (Mpa)	3.17
Evaporation Rate	280
Dynamic Viscosity	<1.2
Surface Tension	22.4
Solubility in Water (20°C)	0.008
Electrical Resistivity	23.8
Octanol / Water Partition Coefficient (23°C)	1.76
Flash Point (°C)	4.4 (Closed Cup)
Autogenous Ignition Temperature (°C)	518
Upper Explosive Limit	6.88
Lower Explosive Limit	1.26
Solubility	Can be mixed with alcohol, ether, and other organic-soluble.

Main Application	Widely used in gasoline additives, pharmaceutical intermediates, industrial cleaning agents, nitrocellulose, fuels, paints, paint, ink, and so on.
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