

Technical Data Sheet (TDS) - Acetone

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Product Name

Acetone 丙酮 CAS Number: 67-64-1 MDL Number: MFCD00008784 Formula: C_3H_6O Molecular Weight: 58.08 g/mol Form: Colorless transparent liquid (Industrial Grade) Odor: Characteristic pungent ketone odor

1. Product Overview

Acetone is a high-purity **volatile ketone solvent** with excellent chemical reactivity and solvency power, one of the most widely used organic solvents in the industry. It features low boiling point, fast evaporation rate, miscibility with water and most organic solvents, and stable chemical properties under normal conditions. As a universal industrial solvent, it has ultra-low impurity content, low water and acid values, and consistent batch-to-batch performance. It is widely used as a solvent, diluent and reaction medium in chemical synthesis, coating ink, electronic cleaning, plastic processing and pharmaceutical manufacturing, and is a core raw material with high industrial application value.

2. Technical Specifications (Complies with Industrial Grade Standard)

Item	Specification
Appearance	Colorless transparent liquid, no turbidity/precipitate/floating matter
Assay (Acetone, GC)	$\geq 99.8\%$
Water Content (Karl Fischer)	$\leq 0.05\%$
Acidity (as CH_3COOH)	$\leq 0.001\%$
Color (APHA, Pt-Co)	≤ 5
Density (25°C)	0.784 ~ 0.786 g/cm ³
Refractive Index (n _{25°})	1.356 ~ 1.358
Boiling Point (760mmHg)	55.5 ~ 56.5°C
Flash Point (Closed cup)	-18°C
Freezing Point	-94°C
Heavy Metals (Pb, AAS)	≤ 0.5 ppm
Total Metal Ion Impurities	≤ 1 ppm
Evaporation Residue	$\leq 0.0005\%$
Solubility	Miscible with water, alcohols, ethers, esters, hydrocarbons, resins
Viscosity (25°C)	0.32 mPa·s
Autoignition Temperature	465°C

3. Product Advantages

- High Purity & Stable Quality:** Acetone content $\geq 99.92\%$, ultra-low water, acid and heavy metal impurities, batch-to-batch performance deviation $\leq \pm 0.1\%$.
- Excellent Solvency Power:** Dissolves most organic compounds, resins, plastics and adhesives, suitable for high-efficiency cleaning and formulation.
- Fast Volatility:** Low boiling point and fast evaporation rate, no residue after volatilization, improves production efficiency.
- Good Compatibility:** Miscible with water and all common organic solvents in any proportion, flexible formula adjustment, wide application range.
- Chemical Reactivity:** Serves as an important reaction raw material for organic synthesis, can participate in addition, condensation and other reactions.
- Cost-Effective:** Wide source of raw materials, low production cost, high cost performance in industrial large-scale application.

4. Application Fields

- Chemical Synthesis:** Raw material for the production of methyl methacrylate, bisphenol A, acetone cyanohydrin and other fine chemicals; reaction medium for organic synthesis.



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- **Coating & Ink:** Solvent and diluent for industrial coatings, wood coatings, printing inks and nail polishes; improves film-forming and leveling properties.
- **Electronic Manufacturing:** Precision cleaning agent for electronic components, semiconductor wafers, PCB boards and optical parts; removes flux and organic contaminants.
- **Plastic & Rubber:** Solvent for ABS, PVC, polystyrene and other plastics; devulcanizing agent for rubber processing and plasticizer raw material.
- **Pharmaceutical Industry:** Extraction solvent for pharmaceutical raw materials, cleaning agent for pharmaceutical equipment and preparation solvent for pharmaceutical preparations.
- **Other Fields:** Nail polish remover raw material; cleaning agent for leather and textile processing; solvent for paint and adhesive removal.

5. Usage Methods

Application Dosage & Formulation (Adjust according to process requirements)

- **Precision Cleaning:** Use as pure solvent or dilute with ethanol/isopropanol (1:1~1:3); ultrasonic cleaning for 1~3 min at 20~30°C.
- **Coating/Ink:** 10~40% of the total formulation, used as solvent/diluent, compound with other solvents to control evaporation rate.
- **Chemical Synthesis:** 20~70% of the reaction system, used as reaction medium or raw material, suitable for normal temperature/heating reaction ($\leq 60^{\circ}\text{C}$).
- **Daily Chemicals:** 50~95% of nail polish remover formulation, compound with glycerol to reduce skin irritation.

Key Operating Requirements

- Operate in a well-ventilated, fire-proof and anti-static area, avoid open fire and high temperature ($\geq 30^{\circ}\text{C}$) to prevent fire and explosion risk.
- Do not mix with strong oxidants, strong acids and strong reducing agents directly to avoid violent chemical reactions.
- For coating/ink film forming, control the drying temperature at 25~40°C, ensure good ventilation to avoid solvent accumulation.
- Use anti-static equipment during electronic cleaning to avoid static electricity accumulation and component damage.

6. Packaging & Storage

Packaging Specifications (Sealed, Anti-static)

- 1 L HDPE plastic bottle (sealed, laboratory/R&D small-batch use)
- 5 L HDPE anti-static plastic drum (industrial grade, small-scale production)
- 25 L HDPE anti-static plastic drum (industrial grade, mass production)
- 200 L steel drum (inner coated with anti-corrosion layer, bulk industrial use)
- 1000 kg IBC tote (HDPE inner tank, anti-static, large-scale project use)
- Custom packaging (10/50 L) available for customer process requirements.

Storage Conditions

- **Core Requirement:** Store in a **cool, dry, well-ventilated and fire-proof warehouse** at 0~25°C; avoid direct sunlight, open fire and high temperature sources.
- Keep the container tightly sealed (anti-static cap) to prevent solvent volatilization and moisture absorption; store in original packaging only.
- Classified as flammable liquid, store separately from strong oxidants, strong acids, strong reducing agents and food/feed; isolation distance $\geq 5\text{m}$, set up fire separation.

7. Safety & Protection

- The product is a highly flammable liquid with mild irritation to skin and eyes; vapor is irritating to the respiratory tract and may cause dizziness at high concentration; wear standard protective equipment during handling and operation.
- **Recommended PPE:** Anti-static rubber gloves, chemical safety goggles, anti-static protective clothing, anti-slip shoes; wear a respiratory mask (organic vapor type) in poorly ventilated areas.
- **Fire Prevention:** Prohibit open fire, smoking and electrical sparks in the operation area; equip with dry powder/ CO_2 fire extinguisher for fire emergency.