

PRODUCT IDENTIFICATION



Product Name: 60/40 Methanol/DI Water Solution ACS Grade

CAS Number: 67-56-1

Molecular Formula: CH₄O

Molecular Weight: 32.042 g/mol

Grade: ACS Grade

Purity / Concentration: 60%

Synonyms: Methanol-Water Solution, Methanol Dilution

PRODUCT OVERVIEW

The Alliance Chemical 60/40 Methanol/DI Water Solution is a high-purity ACS Grade solvent designed for consistent laboratory performance. With strict controls on impurities like aldehydes at 18 ppm and low metal content, this solution provides a reliable baseline for precise chemical analysis and synthesis.

Grade Significance: ACS Grade signifies that this product meets the rigorous purity standards set by the American Chemical Society, ensuring it is suitable for critical analytical applications where low impurity levels are essential for accurate results.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay Gc	%	60	59.5	60.5	GC
Color (APHA)	APHA	8	—	50	APHA
Moisture	%	0.01	0	0.03	Per specification
Non Volatile Residue	mg/100mL	2	—	15	Evaporation
Residue On Evaporation	ppm	5	—	10	Evaporation
Aluminum Al	ppm	0.03	0	0.06	ICP-MS
Arsenic As	ppm	0.03	0	0.06	ICP-MS
Chromium Cr	ppm	0.03	0	0.06	ICP-OES
Copper Cu	ppm	ND	0	0.1	ICP-OES
Heavy Metals As Pb	ppm	ND	0	0.1	ICP-MS
Iron (Fe)	ppm	0.01	0	60	ICP-MS
Lead Pb	ppm	0.03	0	0.06	ICP-MS
Manganese Mn	ppm	ND	0	0.1	ICP-OES
Nickel Ni	ppm	0.03	0	0.06	ICP-OES
Potassium K	ppm	0.03	0	0.06	ICP-OES
Sodium Na	ppm	0.03	0	0.06	ICP-OES
Zinc Zn	ppm	0.03	0	0.06	ICP-MS
Chlorides As Cl	ppm	0.15	—	15	ICP
Phosphate	ppm	ND	0	0.3	Per specification
Sulfate (SO ₄ ²⁻)	ppm	≤ 0.3 ppm	—	—	ICP
Acidity As Acetic	%	0.0010	—	0.0020	Titration
Aldehydes As Acetaldehyde	ppm	≤ 18 ppm	—	—	Spectrophotometry
Alkalinity	—	0.0003	—	0.0010	Per specification
Boron B	ppm	0.03	0	0.06	ICP-MS
Deg Content	%	ND	0	—	GC
Particle Size	µm	2	0	30	Sieve Analysis
Stability Available Oxygen	%	36	0	—	Stability Test
Tin Sn	ppm	0.03	0	0.06	ICP-MS

ND = Not Detected. Values are typical and may vary by lot.

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, colorless liquid	Odor	Slightly sweet odor
Form	Liquid	Boiling Point	not characterized for the solution (methanol/water boils ~65–100 °C)
Melting / Freezing Point	-144 °F (NTP, 1992)	Flash Point	≈23 °C closed cup (60/40 methanol/water; IChem Symp.150 2004, LabChem 50% v/v=27 °C). PG II governed by the subsidiary 6.1 toxicity, not flammable
Specific Gravity	0.895	Solubility	Miscible with water
Molecular Formula	CH ₄ O	Molecular Weight	32.042 g/mol
Vapor Pressure (20°C)	97 mmHg	Viscosity (25°C)	0.54 cP
Refractive Index (20°C)	1.3288	Density (25°C)	0.787 g/mL
Decomposition Temp.	Not applicable (decomposes before melting; standard handling at 20°C-25°C)		

APPLICATIONS

1. **Analytical Chemistry** — Used as a mobile phase component in reversed-phase HPLC to achieve high-resolution separation of organic compounds.
2. **Spectroscopy** — Serves as an ideal baseline solvent for UV-Vis spectroscopy due to its low UV cutoff wavelength and minimal background interference.
3. **Pharmaceutical Manufacturing** — Utilized in liquid-liquid extraction processes to isolate and purify sensitive pharmaceutical intermediates.
4. **Organic Synthesis** — Acts as both a reactive solvent and a chemical reagent for facilitating various complex organic synthesis pathways.

STORAGE & HANDLING

Due to its high flammability and toxic nature, this solution must be stored in a cool, well-ventilated area away from ignition sources. Maintaining an airtight seal is critical to prevent evaporation and ensure the chemical concentration remains at the specified 60% purity levels.

- Store in a cool, dry place away from heat sources.
- Use HDPE or glass containers for storage to avoid chemical reactions.
- Keep away from strong oxidizers and acids.
- Ensure proper ventilation when handling to avoid inhalation of vapors.
- Wear appropriate personal protective equipment (PPE) including gloves and goggles.

AVAILABLE PACKAGING

- 1 Quart
- 1 Gallon
- 5 Gallon
- 15 Gallon
- 55 Gallon
- 275 Gallon
- 330 Gallon

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: **Danger**



Hazard Statements:

- H225: Highly flammable liquid and vapour
- H301: Toxic if swallowed
- H311: Toxic in contact with skin
- H331: Toxic if inhaled
- H370: Causes damage to organs

Emergency Contact: CHEMTEL - 800-255-3924 (24 Hours/Day, 7 Days/Week)

For complete safety information, refer to the Safety Data Sheet (SDS) for this product.

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