

PRODUCT IDENTIFICATION

**Product Name:** 60/40 Methanol/ DI Water Solution Technical Grade**CAS Number:** 67-56-1**Molecular Formula:** CH₄O**Molecular Weight:** 32.042 g/mol**Grade:** Technical Grade**Purity / Concentration:** 60%**Synonyms:** Methanol-Water Mixture, Methanol Dilution

PRODUCT OVERVIEW

Alliance Chemical's 60/40 Methanol/DI Water Solution is a high-purity Technical Grade mixture featuring a 60% methanol concentration. With controlled impurities like aldehydes at 18 ppm and non-detected levels of copper, this solution provides consistent performance for laboratory and analytical applications.

Grade Significance: Technical Grade indicates that the product is manufactured to meet consistent purity standards suitable for industrial and laboratory processes where high-level analytical precision is required.

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
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	0	0.3	ICP
Acidity As Acetic	%	0.0010	—	0.0020	Titration
Aldehydes As Acetaldehyde	ppm	≤ 18 ppm	—	—	Spectrophotometry
Boron B	ppm	0.03	0	0.06	ICP-MS
Deg Content	%	ND	0	—	GC
Particle Size	μm	2	0	30	Sieve Analysis
Sulfite	%	ND	0	—	Per specification
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, alcoholic 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	Fully water miscible
Molecular Formula	CH ₄ O	Molecular Weight	32.042 g/mol
Vapor Pressure (20°C)	440 mmHg (approx. for 60/40 methanol/water mixture; 20°C to 25°C range)	Viscosity (25°C)	0.54 cP
Refractive Index (20°C)	1.3288	Density (25°C)	0.791 g/mL
Partition Coefficient (log P)	-0.74	Decomposition Temp.	338

APPLICATIONS

1. **Analytical Chemistry** — This solution serves as a critical mobile phase component in reversed-phase HPLC, ensuring precise separation of organic compounds.
2. **Spectroscopy** — It acts as a reliable baseline solvent for UV-Vis spectroscopy, valued for its low UV cutoff wavelength.
3. **Pharmaceutical Manufacturing** — The mixture is utilized in liquid-liquid extraction processes to isolate and purify pharmaceutical intermediates.
4. **Laboratory Maintenance** — Its effective solvent properties make it an ideal choice for cleaning sensitive laboratory glassware and precision equipment.

STORAGE & HANDLING

Due to its classification as a highly flammable and toxic liquid, this solution must be stored in a cool, well-ventilated area away from heat sources and ignition points. Maintaining these conditions prevents the accumulation of hazardous vapors and ensures the chemical integrity of the methanol-water mixture.

- Store in a cool, dry, well-ventilated area away from heat sources.
- Use containers made of HDPE or glass to prevent chemical reactions.
- Avoid contact with strong oxidizing agents and acids.
- Keep away from light to prevent degradation.
- Use 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.

Alliance Chemical | 204 South Edmond St, Taylor, Texas 76574 | 512-365-6838 | www.alliancechemical.com

Disclaimer: The information contained herein is believed to be accurate and represents the best information currently available to us. However, Alliance Chemical makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.