

PRODUCT IDENTIFICATION

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

PRODUCT OVERVIEW

The 60/40 Methanol/DI Water Solution is a high-purity Technical grade solvent designed for precise laboratory and industrial applications. Featuring an assay of 60% and exceptional clarity at 5 APHA, this mixture is a reliable baseline solvent for critical analytical procedures.

Grade Significance: Technical grade signifies that the product meets strict purity standards suitable for industrial and laboratory tasks where reliability is required, though it is not intended for pharmaceutical or food-grade consumption.

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
Water Karl Fischer	%	0.02	—	0.06	Karl Fischer
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
Distillation Range	—	38.76	—	6	Per specification
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 is frequently used as a mobile phase component in reversed-phase HPLC to achieve efficient separation of organic compounds.
2. **Spectroscopy** — Due to its low UV cutoff wavelength, this mixture serves as a standard baseline solvent for accurate readings in UV-Vis spectroscopy.
3. **Pharmaceutical Manufacturing** — The mixture is utilized in liquid-liquid extraction processes to effectively isolate complex pharmaceutical intermediates.
4. **Laboratory Maintenance** — It acts as a high-performance cleaning agent for laboratory glassware and precision equipment, ensuring surfaces are free of residues.

STORAGE & HANDLING

Proper storage is essential because this solution is highly flammable with a flash point of 11°C, necessitating a cool, well-ventilated area away from ignition sources. Additionally, the toxic nature of methanol requires secure containment to prevent accidental skin contact or inhalation in the workplace.

- 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 vapor [Danger Flammable liquids]
- H301: Toxic if swallowed [Danger Acute toxicity, oral]
- H311: Toxic in contact with skin [Danger Acute toxicity, dermal]
- H331: Toxic if inhaled [Danger Acute toxicity, inhalation]
- H370 **: Causes damage to organs [Danger Specific target organ toxicity, single exposure]

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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