

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

This 60/40 Methanol/DI Water solution is a high-purity ACS grade solvent designed for precise analytical and synthetic applications. With a tightly controlled assay of 59.9% and extremely low trace metal content, such as iron at 0.05 ppm, it provides the reliability required for sensitive laboratory workflows.

Grade Significance: ACS Grade signifies that this product meets the strict purity standards set by the American Chemical Society, ensuring it is suitable for demanding laboratory use where reagent quality is vital 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
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 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
Distillation Range	—	38.7	—	39.06	Per specification
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 high-performance liquid chromatography to achieve consistent separation of organic compounds.
2. **Spectroscopy** — Serves as a reliable baseline solvent in UV-Vis spectroscopy, chosen for its low UV cutoff wavelength and minimal background interference.
3. **Pharmaceutical Manufacturing** — Utilized in liquid-liquid extraction processes to effectively isolate and purify pharmaceutical intermediates.
4. **Organic Synthesis** — Acts as a standardized solvent and reagent for various chemical reactions where purity is essential to prevent unwanted side reactions.

STORAGE & HANDLING

Due to its flash point of 11°C, this solution is classified as a highly flammable liquid and must be stored in a cool, well-ventilated area away from ignition sources. Proper containment is critical to prevent the accumulation of toxic vapors and to maintain the integrity of the reagent by protecting it from moisture and environmental contaminants.

- 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 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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