

### PRODUCT IDENTIFICATION



**Product Name:** Deionized Water  
**CAS Number:** 7732-18-5  
**Molecular Formula:** H<sub>2</sub>O  
**Molecular Weight:** 18.015 g/mol  
**Grade:** Technical  
**Purity / Concentration:** 100%  
**Synonyms:** Demineralized Water, Purified Water

### PRODUCT OVERVIEW

Alliance Chemical offers high-purity Technical grade Deionized Water, characterized by an exceptionally low conductivity of 0.06  $\mu\text{S}/\text{cm}$  and minimal trace ion content. This demineralized water is an essential baseline solvent for sensitive chemical analyses, chromatography, and precision industrial cooling applications.

**Grade Significance:** Technical grade indicates a high-purity product suitable for industrial and laboratory applications where consistent, low-contaminant water is required for reliable results.

### CERTIFICATE OF ANALYSIS — TYPICAL VALUES

| PARAMETER                                  | UNIT                    | TYPICAL     | MIN | MAX  | TEST METHOD |
|--|-------------------------|-------------|-----|------|-------------|
| Color (APHA)                               | APHA                    | 5           | —   | 10   | ASTM D1209  |
| Residue After Ignition                     | ppm                     | 0.1         | —   | 1    | USP <281>   |
| Heavy Metals (as Pb)                       | ppm                     | 0.01        | —   | 0.1  | USP <231>   |
| Iron (Fe)                                  | ppm                     | 0.01        | —   | 0.02 | ASTM D1068  |
| Ammonium (NH <sub>4</sub> <sup>+</sup> )   | ppm                     | 0.01        | —   | 0.05 | ASTM D1426  |
| Chloride (Cl <sup>-</sup> )                | ppm                     | 0.01        | —   | 0.2  | ASTM D512   |
| Nitrate (NO <sub>3</sub> <sup>-</sup> )    | ppm                     | 0.01        | —   | 0.2  | ASTM D3867  |
| Phosphate (PO <sub>4</sub> <sup>3-</sup> ) | ppm                     | 0.01        | —   | 0.02 | ASTM D515   |
| Sulfate (SO <sub>4</sub> <sup>2-</sup> )   | ppm                     | 0.02        | —   | 0.5  | ASTM D516   |
| Carbon Dioxide                             | —                       | Passes Test | —   | —    | ACS         |
| Conductivity Us Cm                         | $\mu\text{S}/\text{cm}$ | 0.06        | —   | 1    | ASTM D1125  |
| Silicate SiO <sub>2</sub>                  | ppm                     | 0.01        | —   | 0.05 | ASTM D859   |
| Titration Acid                             | —                       | Passes Test | —   | —    | ACS         |
| Titration Base                             | —                       | Passes Test | —   | —    | ACS         |

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

## PHYSICAL & CHEMICAL PROPERTIES

|                                 |                     |                              |                  |
|---------------------------------|---------------------|------------------------------|------------------|
| <b>Appearance</b>               | Clear, odorless     | <b>Odor</b>                  | Odorless         |
| <b>Form</b>                     | Liquid              | <b>Boiling Point</b>         | 100°C (212°F)    |
| <b>Melting / Freezing Point</b> | 0°C (32°F)          | <b>Specific Gravity</b>      | 1.0              |
| <b>Solubility</b>               | Miscible with water | <b>Molecular Formula</b>     | H <sub>2</sub> O |
| <b>Molecular Weight</b>         | 18.015 g/mol        | <b>Vapor Pressure (20°C)</b> | 23.8 mmHg        |
| <b>Refractive Index (20°C)</b>  | 1.3330              | <b>Density (25°C)</b>        | 0.998 g/mL       |
| <b>Decomposition Temp.</b>      | Not applicable      |                              |                  |

## APPLICATIONS

- Analytical Chemistry** — Used as a high-purity mobile phase component in reversed-phase chromatography to ensure accurate separation of organic compounds.
- Laboratory Research** — Serves as an ideal baseline solvent for UV-Vis spectroscopy due to its extremely low UV cutoff wavelength and lack of interfering contaminants.
- Industrial Manufacturing** — Utilized in high-performance cooling systems for machinery to prevent mineral buildup and equipment overheating.
- Chemical Formulation** — Acts as a reliable, non-reactive base for the preparation of complex reagents and chemical solutions where purity is critical.

## STORAGE & HANDLING

Deionized water must be stored in high-quality, sealed containers to prevent the absorption of atmospheric carbon dioxide and airborne contaminants, which would quickly increase conductivity. Maintaining a clean, airtight environment preserves the product's integrity and prevents the leaching of ions from storage vessel materials.

- Store in a cool, dry place away from direct sunlight.
- Use containers made of HDPE or glass to prevent leaching of contaminants.
- Avoid exposure to air to minimize recontamination.
- Use appropriate PPE such as gloves and goggles when handling.
- Ensure proper ventilation in storage areas to avoid buildup of vapors.

## AVAILABLE PACKAGING

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

## SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

### Signal Word: Warning

No GHS pictograms assigned.

### Hazard Statements:

- Not Classified
- Reported as not meeting GHS hazard criteria by 1866 of 1876 companies (only 0.5% companies provided GHS information). For more detailed information, please visit ECHA C&L website.

**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](http://www.alliancechemical.com)

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