TECHNICAL DATA SHEET

100% Propylene Glycol Inhibited

Revised: 11/04/2026 (Version 1.4) | Product code: PG100-INH

1. PRODUCT DESCRIPTION

100% Propylene Glycol Inhibited is an inhibited propylene glycol **concentrate**: propylene glycol with a **nitrite-containing hybrid organic-acid corrosion inhibitor package**, no added water. Blended by Alliance Chemical in Taylor, Texas. Dilute with deionized or distilled water to the freeze protection the system needs, for closed-loop HVAC, chilled-water, hydronic and process-cooling systems.

- Inhibitor package: sodium nitrite, triethanolamine, sodium benzoate and sodium molybdate with organic-acid inhibitors. Contains nitrite and molybdate.
- The inhibitor dilutes with the glycol: every dilution in Section 5 carries at least 24 ppm nitrite (as NO_2) per wt % glycol.
- Not dyed. Not classified as hazardous under GHS; not regulated for transport by DOT.
- Not for food-contact, incidental-food-contact or potable-water service; not USP/NF grade; not a solvent or laboratory reagent.

2. COMPOSITION

COMPONENT	CAS NO.	% BY WEIGHT
Propylene glycol (propane-1,2-diol)	57-55-6	95.6 – 96.4
Corrosion inhibitor package (nitrite-containing hybrid organic-acid)	Mixture	3.6 – 4.4
— of which sodium nitrite	7632-00-0	0.36 – 0.88
— of which triethanolamine	102-71-6	< 0.44
— of which sodium benzoate	532-32-1	< 0.14
— of which sodium molybdate dihydrate	10102-40-6	< 0.09

Inhibitor package dosed at 4.0% (range 3.6–4.4%) by weight of the concentrate. Component ranges calculated over that dose range from the inhibitor manufacturer's composition ranges; the balance of the package is proprietary to the inhibitor manufacturer.

3. SPECIFICATIONS

TEST	SPECIFICATION	METHOD / BASIS
Propylene glycol content	95.6 – 96.4 % by weight	Formulation
Appearance	Clear, colorless to pale yellow liquid, free of sediment and suspended matter	Visual
Corrosion inhibitor package	3.6 – 4.4 % by weight	Formulation
Nitrite (as NO_2)	2,400 ppm min. (calculated 2,650–5,300 ppm at the 4.0% dose)	Formulation minimum
Density (20 °C)	1.0394 – 1.0424 g/cm³	Formulation
pH, 50% solution in water	Reported on lot COA (typically 7.0 – 9.0)	ASTM D1287
Reserve alkalinity	Reported on lot COA	ASTM D1121

Specifications are limits for the product as shipped. Rows marked formulation are calculated from the blend recipe; measured values are reported on the lot Certificate of Analysis.

4. CORROSION PROTECTION

The inhibitor package combines sodium nitrite (steel and cast iron), sodium molybdate, sodium benzoate and triethanolamine with organic-acid inhibitors. **Data provenance:** Alliance Chemical has not tested this finished concentrate or its dilutions to ASTM D1384 or any other corrosion test standard; no corrosion-test certification is claimed.

5. DILUTION GUIDE

TARGET PROPYLENE GLYCOL, WT %	CONCENTRATE, WT % OF MIX	FREEZE POINT, APPROX.	NITRITE (AS NO_2), PPM MIN.
25	26.0	14.7 °F (−9.6 °C)	600
30	31.2	9 °F (−13 °C)	720
40	41.7	−6 °F (−21 °C)	960
50	52.1	−28.3 °F (−33.5 °C)	1,200
60	62.5	−60 °F (−51 °C)	1,440

Mix by weight with deionized or distilled water; the concentrate is 95.6–96.4 wt % propylene glycol, so wt % concentrate = target wt % glycol ÷ 0.96. Freeze points from published propylene glycol–water property tables, by weight; volume-percent tables give different figures. Do not dilute below 25 wt % glycol: the inhibitor is diluted with the glycol.

6. TYPICAL PHYSICAL PROPERTIES

Appearance / odor	Clear, colorless to pale yellow liquid; practically odorless
Specific gravity (20/20 °C)	1.043 (water = 1), calculated from formulation
Density (20 °C)	1.0409 g/cm³ (8.69 lb/gal), calculated from formulation
Boiling point (760 mmHg)	370.8 °F (188.2 °C) (propylene glycol)
Flash point	210 °F (99 °C) (propylene glycol)
Solubility in water	Miscible in all proportions
Dye	None (colorant can be added on request)

Boiling and flash point are the published propylene glycol values (NTP 1992).

7. APPLICATION, STORAGE & MATERIALS

Use: dilute with good-quality water (deionized or distilled) before filling closed-loop heat-transfer, chilled-water, hydronic and process-cooling systems. Top up with a dilution of the same concentrate.
Compatibility: contains nitrite. Install as a fresh fill after draining and flushing; do not mix with phosphate-, silicate- or nitrite-free coolants.
Materials: formulated for steel, cast iron, copper, brass and solder; EPDM is the standard elastomer for glycol/water service. Avoid galvanized (zinc) surfaces.
Storage: tightly sealed original containers in a cool, dry area; propylene glycol is hygroscopic. Avoid prolonged storage above 100 °F, heat and open flame.

8. PACKAGING & LOGISTICS

Packages	Quart through 330-gallon IBC tote (55-gal drum and 275-gal IBC tote for system fills)
US DOT	Not regulated for transport
Documents	SDS (rev. 11/04/2026), this TDS, and lot Certificate of Analysis

This Technical Data Sheet is provided for technical reference; the Safety Data Sheet controls where guidance differs. Values reflect Alliance Chemical formulation data and published glycol data at the time of revision. ALLIANCE CHEMICAL MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE; users should verify suitability for their system. Alliance Chemical · 204 South Edmond St, Taylor, TX 76574 · 512-365-6838 · www.alliancechemical.com