

# ALLIANCE CHEMICAL

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## Technical Data Sheet

### Inhibited Ethylene Glycol 30 / 70 with OAT-908

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#### 1. PRODUCT IDENTIFICATION

Product Name	Inhibited Ethylene Glycol 30 / 70 with OAT-908
Product Code	AC-EG30-OAT908
Chemical Family	Aqueous monoethylene glycol blend with hybrid OAT / inorganic corrosion inhibitor package
Concentration	30% v/v ethylene glycol in deionized water (ready-to-use)
Inhibitor Package	OAT-908 hybrid organic-acid / inorganic corrosion-inhibitor package at 2.0 – 3.5% w/w of finished blend
Color / Dye	Clear, colorless (fluorescent green or pink dye available on request)
Recommended Use	Closed-loop heat-transfer fluid for HVAC chillers, hydronic loops, data-center direct liquid cooling (DLC) and rear-door heat-exchanger systems, glycol-charged process cooling, freeze / burst protection
Uses Advised Against	Food / potable contact, open recirculation systems, automotive crankcase, single-pass / once-through cooling

#### 2. COMPOSITION

Component	CAS No.	% by weight
Ethylene Glycol	107-21-1	29 – 31%
Deionized Water	7732-18-5	Balance (~66 – 69%)
OAT-908 Inhibitor Package	Mixture	2.0 – 3.5%

**OAT-908 inhibitor package typical sub-composition** (per inhibitor licensor MSDS on file): Sodium Nitrite (CAS 7632-00-0) 10 – 20%; proprietary organic acid (OAT) inhibitors < 20%; Triethanolamine (CAS 102-71-6) < 10%; Sodium Benzoate (CAS 532-32-1) < 3%; Sodium Molybdate Dihydrate (CAS 10102-40-6) < 2%; deionized water balance.

#### 3. PHYSICAL & CHEMICAL PROPERTIES

Property	Typical Value	Method / Reference
Appearance	Clear, colorless liquid (or fluorescent dye if specified)	Visual
Odor	Mild, slightly sweet	Olfactory
Specific Gravity at 20 °C	1.040 – 1.045	ASTM D1298 (MEGlobal Tab 2)
Density at 25 °C	~1.038 g / cm <sup>3</sup>	MEGlobal EG Product Guide
pH (as supplied)	8.5 – 10.0	ASTM D1287 (calc. from OAT-908 dose; lot value via COA)
Reserve Alkalinity	7 – 10 mL 0.1 N HCl	ASTM D1121 (typical OAT buffer)
Freeze Point	<= -15 °C (5 °F)	ASTM D1177 (MEGlobal freeze-protection table)
Boiling Point at 760 mm Hg	>= 102 °C (>= 215 °F)	ASTM D1120 (ASHRAE 2017 ch.31)
Refractive Index at 20 °C	1.354 – 1.358	ASTM D1747

Viscosity at 40 °C	1.5 – 2.0 cP	ASTM D445 (ASHRAE 2017 ch.31 Tab 22)
Viscosity at 100 °C	~0.55 cP	ASTM D445
Specific Heat at 20 °C	0.92 Btu / lb·°F (3.85 kJ / kg·K)	ASHRAE 2017 ch.31 Tab 22
Thermal Conductivity at 50 °C	0.42 – 0.46 W / m·K	ASHRAE 2017 ch.31 Tab 22
Vapor Pressure at 20 °C	~17 mm Hg	MEGlobal EG Product Guide
Solubility in Water	Completely miscible	Visual
Flash Point	Non-flammable as supplied (water-rich blend)	ASTM D93 (closed cup)

Values are typical for the 30 / 70 blend; lot-specific values are recorded on the Certificate of Analysis (COA) issued with each shipment.

#### 4. CORROSION PERFORMANCE (ASTM D1384 / ASTM D3306)

OAT-908 is a hybrid organic-acid / inorganic corrosion-inhibitor package combining sodium nitrite, sodium molybdate, sodium benzoate, and proprietary aliphatic organic acids. The package is formulated to meet or exceed ASTM D3306 industrial coolant corrosion limits across the standard six-metal coupon stack of ASTM D1384 (336 hr, 88 °C, aerated).

Metal Coupon	ASTM D3306 Limit (mg loss / specimen)	Result
Copper (C110)	<=10	PASS
Solder (Pb-Sn)	<=30	PASS
Brass (C260)	<=10	PASS
Steel (1018)	<=10	PASS
Cast Iron (G3000)	<=10	PASS
Aluminum (3003)	<=30	PASS

**Note on data provenance:** ASTM D1384 corrosion performance is reported against published ASTM D3306 (Standard Specification for Glycol-Based Engine Coolants) acceptance limits. The underlying laboratory-coupon test report on OAT-908 at typical service dose, retained on file with the inhibitor licensor, is available to qualified customers under non-disclosure agreement upon written request.

#### 5. MATERIAL COMPATIBILITY

Compatible Materials	Not Recommended
<p><b>Metals:</b> copper, brass, mild steel, cast iron, stainless steel (304/316), aluminum (3003, 6061), lead-tin solder.</p> <p><b>Plastics:</b> polypropylene (PP), HDPE, PVC, PVDF, PTFE.</p> <p><b>Elastomers:</b> NBR (Buna-N), EPDM, FKM (Viton), HNBR, VMQ silicone, neoprene (CR), CSM (Hypalon).</p>	<p><b>Elastomers:</b> natural rubber (NR).</p> <p><b>Metals:</b> zinc-galvanized surfaces for prolonged immersion; magnesium alloys; soft (low-tin) solder in continuous high-temperature service.</p> <p><b>Plastics:</b> some grades of polyurethane (verify with manufacturer).</p>

#### 6. DILUTION & MAKE-UP

Supplied as a 30 / 70 v/v ready-to-use blend. A glycol concentrate plus inhibitor pre-charge (95 / 5 v/v EG / OAT-908) is also available; field-blend 1 part concentrate with 2.33 parts deionized or distilled water by volume to achieve 30 vol% ethylene glycol. Use only deionized or distilled water (< 50 µS / cm conductivity, < 25 ppm chloride, < 25 ppm sulfate) for top-up and make-up. Tap or hard water introduces calcium / magnesium scale and chloride that will accelerate pitting and shorten inhibitor life.

#### 7. SERVICE LIFE & MAINTENANCE

Closed-loop service life of **5+ years** is typical for OAT-buffered ethylene glycol coolants under design operating conditions. Service life is dependent on system cleanliness, oxygen ingress, make-up water quality, peak operating temperature, and avoidance of cross-contamination with incompatible inhibitor chemistries. Annual fluid analysis is recommended:

Test	Method	Typical Replace / Treat Trigger
Reserve Alkalinity	ASTM D1121	Replace or sweeten when < 5.0 mL
pH	ASTM D1287	Replace when < 7.0 or > 11.0
Refractive index / SG	ASTM D1747 / D1298	Adjust dilution when freeze-point margin lost
Reserve inhibitor (ICP)	Lab	Replace or sweeten if molybdate / nitrite < 30% of fresh value
Visual / particulate	Visual + filter	Investigate if discolored, oily layer, or > 100 mg/L solids

## 8. PACKAGING

Container	Net Volume	Net Weight (approx.)
HDPE pail	5 US gallons (18.9 L)	~44 lb (20 kg)
Steel drum, lined	55 US gallons (208 L)	~480 lb (218 kg)
IBC tote (preferred bulk)	275 US gallons (1041 L)	~2,400 lb (1,089 kg)
IBC tote, large	330 US gallons (1249 L)	~2,880 lb (1,306 kg)
Bulk tanker	4,000 – 6,500 US gallons	Quoted on request

## 9. STORAGE & HANDLING

Store sealed indoors at 5 – 40 °C (40 – 104 °F). Avoid prolonged storage at temperatures below the blend freeze point; ice formation can cause inhibitor stratification and out-of-spec on thaw. Shelf life is **two (2) years** in a sealed, original container; once a tote or drum is opened, use the contents within 12 months. Standard chemical PPE applies: chemical-resistant gloves, splash-rated safety glasses or full face shield, and impervious apron. Refer to the corresponding Safety Data Sheet (SDS) for full hazard identification, first-aid measures, accidental-release procedures, transport classification, and disposal guidance.

## 10. QUALITY ASSURANCE

Inhibited Ethylene Glycol 30 / 70 with OAT-908 is blended at Alliance Chemical's Taylor, Texas USA facility under documented batch-control procedures. Each batch is assigned a lot number and receives in-house QC testing for pH, specific gravity, refractive index, and inhibitor reserve; a lot-specific Certificate of Analysis (COA) accompanies every shipment on request. The finished blend conforms to ASTM D3306 industrial corrosion-coolant performance limits.

## 11. ORDERING & TECHNICAL SUPPORT

**Sales:** sales@alliancechemical.com | +1 512-365-6838

**Technical contact:** Andre Taki, Technical Specialist | andre@alliancechemical.com | ext. 515

**24-hour transportation emergency:** CHEMTREC 1-800-424-9300

**Web:** alliancechemical.com

**References:** OAT-908 inhibitor licensor MSDS data on file; MEGlobal Ethylene Glycol Product Guide; ASHRAE Handbook 2017, Chapter 31; ASTM D1384, D1287, D1121, D1177, D1120, D1298, D1747, D445, D3306. Underlying ASTM D1384 laboratory-coupon test data on the OAT-908 inhibitor package is retained on file with the inhibitor licensor and is available to qualified customers under NDA upon written request.

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