

PROCLIN™ 200 PRESERVATIVE FOR DIAGNOSTIC REAGENTS



ProClin preservatives are among the most widely used biocides in the In vitro diagnostic (IVD) industry, used in over 1,000 FDA registered IVD kits from industry leading diagnostic manufacturers. At low working concentrations, ProClin can help extend the shelf life of IVD reagents by effectively inhibiting a broad spectrum of microbes. ProClin biocides are water-soluble formulations that are easily used directly from the container. Unlike other biocides, ProClin products present no health hazards, toxicology problems, or disposal issues at recommended usage levels.

Key Features of ProClin 200

- Compatibility with key enzymes and diagnostic assay indicators
- Will not inhibit antibody binding
- Safe; environmentally friendly; easy-to-use water-soluble liquid, effective at very low concentrations, typically 0.05 – 0.10% (w/w)
- Excellent stability over a wide pH range
- Stable in TRIS, TES and HEPES buffer up to a pH of 7
- Level of active ingredients assayable by HPLC

Formulation

These numbers do not constitute specifications.

- 5-Chloro-2-methyl-4-isothiazolin-3-one (CMIT)
- 2-Methyl-4-isothiazolin-3-one (MIT)
- Magnesium nitrate
- Cupic nitrate
- Water

Manufacturing Specifications

- Appearance: colorless to light blue liquid
- Color (APHA): 100 maximum
- pH: 1.7 – 3.7
- Total Active Ingredients: 1.5 – 1.6%
- Ratio: CMIT/Total Active Ingredient 74.5 – 75.5%
- 5-Chloro-2-methyl-4-isothiazolin-3-one: 1.15% (minimum)
- 2-Methyl-4-isothiazolin-3-one: 0.35% (minimum)
- Copper Nitrate: 0.15 – 0.17%
- Magnesium Nitrate: 1.4 – 2.7%

ProClin Ordering Size

| Sizes | Product No. |
|---------------|-------------------------|
| 50 mL Bottle | 48171-U |
| 400 mL Bottle | 500380 |
| 3.6 L Bottle | 500399 |
| 15 L Pail | 500402 |

Physical Properties*

| Property | Value |
|--------------------------------------|--------------------|
| Density (lb/gal) | 8.4 |
| Odor | Mild (aromatic) |
| Specific Gravity | 1.02 |
| Solubility in Water | Completely soluble |
| Viscosity (25 °C) | 3 cps |
| Evaporation Rate (Butyl acetate = 1) | <1 |

*These numbers do not constitute specifications

Other Recommended Products

| Cat. No. | Description |
|-------------------------|------------------------------------|
| 33360-U | ProClin Reference Standard |
| 48121 | ProClin 150 Method Development Kit |
| 48911-U | ProClin 300 Method Development Kit |
| 48119-U | ProClin Variety Kit |

Mechanism of Action

ProClin preservatives attack the central metabolic cycle of the cell, the Krebs cycle, at three specific enzyme sites: α -ketoglutarate dehydrogenase, succinate dehydrogenase, and NADH dehydrogenase. Other inhibited enzymes include pyruvate dehydrogenase, which is vital for the oxidation of pyruvate to acetyl-CoA; as well as lactate dehydrogenase and alcohol dehydrogenase, which detoxify waste by-products synthesized during fermentation. With cellular metabolism debilitated, microorganisms rapidly lose their ability to produce ATP and carry on vital functions, such as transcription, translation and damage repair. All bacteria and fungi possess at least some parts of the Krebs cycle, thus ProClin preservatives represent a highly efficient broad spectrum biocide.

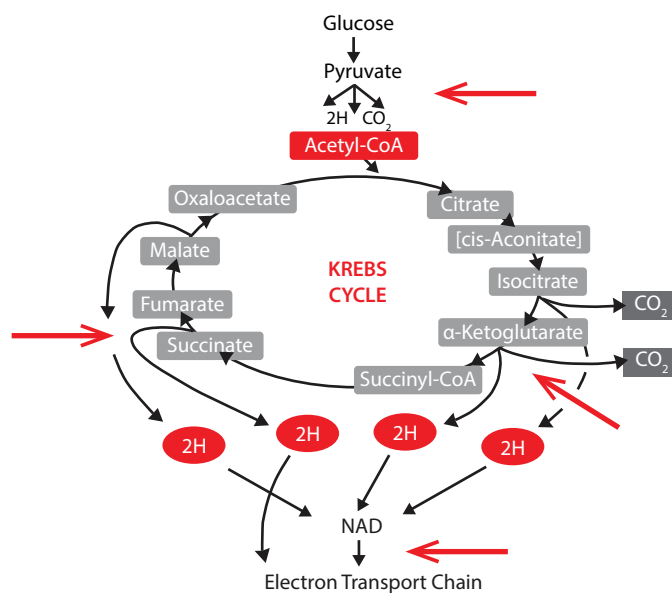


Figure 1. Krebs Cycle. Red arrows represent sites of ProClin 200 inhibition.

Features of ProClin Preservatives

| Features | ProClin 150 | ProClin 200 | ProClin 300 | ProClin 950 |
|------------------------------------|-------------------|--------------------|-------------------|--------------|
| Active (A.I.) | CMIT/MIT | CMIT/MIT | CMIT/MIT | MIT |
| % Total | 1.5 | 1.5 | 3.0 | 9.5 |
| Stabilizer | 23 – 25% Mg salts | 3% Mg and Cu salts | Alkyl carboxylate | None |
| Matrix | Water | Water | Propylene glycol | Water |
| Working pH Range | 2.5 – 8.5 | 2.5 – 8.5 | 2.5 – 8.5 | 2 – 12 |
| Typical Dosage Level (as supplied) | 0.05 – 0.10% | 0.05 – 0.10% | 0.03 – 0.05% | 0.05 – 0.10% |
| Specific Gravity | 1.20 | 1.02 | 1.03 | 1.02 |
| Shelf Life (date of manufacture) | 4 years | 18 months | 3 years | 3 years |

For additional information, contact Technical Service at techserv@sial.com or at 1-800-325-5832.

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