

PROCLIN™ 300 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 300

- Compatibility with key enzymes and diagnostic assay indicators
- 3 year shelf life
- Will not inhibit antibody binding
- Safe; environmentally friendly; easy-to-use water-soluble liquid, effective at very low concentrations, typically 0.03 – 0.05% (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)
- Proprietary glycol: 93 – 95%
- Modified alkyl carboxylate: 2 – 3%

Manufacturing Specifications

- Appearance: clear, colorless to light yellow liquid, free of foreign matter
- Gardner Color: 3 maximum
- Total Active Ingredients: 3.00 – 3.60%
- 5-Chloro-2-methyl-4-isothiazolin-3-one: 2.10 – 2.80%
- 2-Methyl-4-isothiazolin-3-one: 0.60 – 1.00%

ProClin Ordering Size

Sizes	Product No.
1×5 mL Ampule	48934-U
50 mL Bottle	48912-U
400 mL Bottle	48914-U
2.0 L Bottle	48915-U
3.6 L Bottle	48917-U
18 L Pail	48918-U
110 kg Drum	48919-U

Physical Properties*

Property	Value
Density (lb/gal)	8.59
Odor	Mild (sweet)
Absorbance Maximum	275 nm
Viscosity (25 °C)	58 cps
Flash Point (SETA)	120 °F (49 °C)
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.

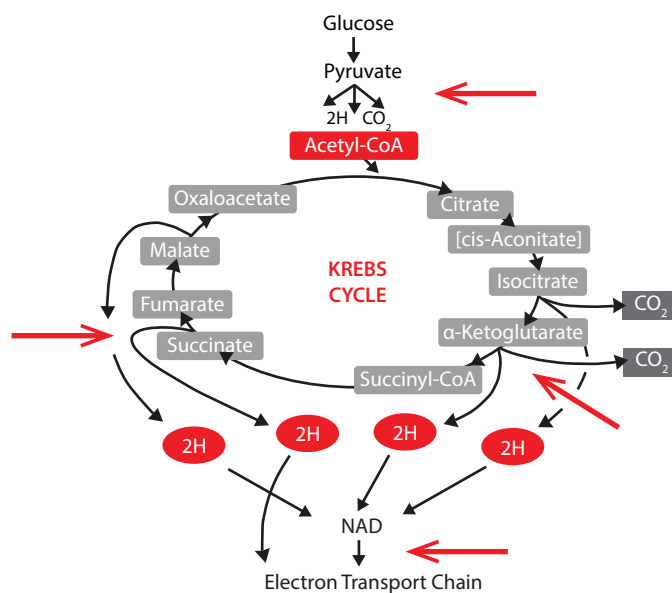


Figure 1. Krebs Cycle. Red arrows represent sites of ProClin 300 inhibition.

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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