

<b>Product Name:</b>	Irgasan (Triclosan)
<b>Product Number:</b>	I002
<b>CAS Number:</b>	3380-34-5
<b>Molecular Formula:</b>	$C_{12}H_7Cl_3O_2$
<b>Molecular Weight:</b>	289.54
<b>Form:</b>	Powder
<b>Appearance:</b>	White powder
<b>Solubility:</b>	Basic solution: Soluble Diethyl ether: Soluble Ethanol: Soluble Methanol: Soluble Water: Slightly soluble
<b>Source:</b>	Synthetic
<b>Water Content (Karl Fischer):</b>	≤0.1%
<b>Melting Point:</b>	56-60 °C
<b>Storage Conditions:</b>	2-8 °C
<b>Description:</b>	Irgasan (Triclosan) is a broad spectrum antibacterial agent that inhibits bacterial fatty acid synthesis. Irgasan is slightly soluble in water and freely soluble in ethanol and methanol.
<b>Mechanism of Action:</b>	Irgasan demonstrates a bacteriostatic effect by binding to the enoyl-acyl carrier protein reductase (enoyl-ACP), an enzyme involved in fatty acid synthesis. After forming a complex, nicotinamide adenine dinucleotide (NAD) binds and prevents enoyl-ACP from participating in the fatty acid synthesis cycle which inhibits bacterial cell growth. Triclosan permeabilizes the bacterial envelope.
<b>Spectrum:</b>	Gram-negative bacteria, Gram-positive bacteria, Fungi.
<b>Microbiology Applications</b>	<p>Irgasan is used as a media supplement in <i>Pseudomonas</i> and <i>Yersinia</i> isolation agars.</p> <p>During the 1990s, bacterial isolates with reduced susceptibility to Irgasan were produced in lab experiments by repeated exposure to sublethal concentrations. Since 2000, a number of studies have verified resistance among dermal, intestinal, and environmental microorganisms. (Yazdankhah, 2006). Resistance in <i>E. coli</i> is acquired through a missense mutation in the <i>fabI</i> gene (Heath et al, 2010).</p>

**References:**

Heath RJ (2010) Mechanism of Triclosan Inhibition of Bacterial Fatty Acid Synthesis. J. Biol. Chem. 274(16):11110-4. PMID 10196195

Lopez-Garcia J, Lehocky M, Humpolicek P, and Saha P (2014) HaCa T Keratinocytes response on antimicrobial atelocollagen substrates: Extent of cytotoxicity, cell viability and proliferation. J. Funct. Biomater. 5(2):43-57

Yazdankhah SP (2006) Triclosan and antimicrobial resistance in bacteria: An overview. Microb Drug Resist. 12(2):83-90 PMID 16922622

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