

Global 1-Thioglycerol Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global 1-Thioglycerol market size is expected to reach \$ million by 2032, rising at a market growth of %CAGR during the forecast period (2026-2032).

In 2025, global 1-Thioglycerol capacity 200 Tons, sales reached approximately 108 Tons, with an average market price of around 32 USD/Kg, industrial gross margin 26%.

1-Thioglycerol is a multifunctional specialty molecule combining a reactive thiol group with two hydrophilic hydroxyl groups, positioning it across pharmaceutical excipients, biochemical reagents, analytical materials and nanoparticle ligands. Its systematic name is 3-mercapto-1,2-propanediol, and it is also sold as monothioglycerol or thioglycerin. The compound carries CAS No. 96-27-5, molecular formula $C_3H_8O_2S$ and molecular weight 108.16. Commercial material is normally a colorless to pale-yellow viscous liquid with a mild sulfurous odor. NF-grade specifications define an assay of 97.0%–101.0% on an anhydrous basis, while typical physical parameters include a specific gravity of approximately 1.241–1.250, refractive index of 1.521–1.526 and pH of 3.5–7.0 for a 10% solution. The thiol group provides reducing, antioxidant and metal-binding activity, while the diol structure improves water compatibility and formulation flexibility.

Pharmaceutical formulations represent the highest-specification commercial outlet for 1-Thioglycerol. Monothioglycerol is used as an antioxidant and auxiliary antimicrobial agent in parenteral products, suspensions and other oxidation-sensitive liquid formulations. It can limit oxidative degradation, discoloration and potency loss by reacting with dissolved oxygen, peroxides or reactive intermediates. Pharmaceutical customers evaluate more than assay: water, residue on ignition, elemental impurities, color, odor, microbial quality and packaging compatibility are integral to supplier

qualification. The USP?NF monograph provides a formal compendial basis for monothioglycerol, while cGMP manufacturing, change control, traceability and formulation-specific compatibility studies differentiate pharmaceutical material from ordinary reagent grades.

Research reagents and advanced materials form a smaller-volume but higher-unit-value segment of the 1-Thioglycerol market. In biochemistry, it is used to maintain reducing conditions and protect oxidation-sensitive proteins, enzymes and thiol-containing molecules. It also serves in fluorescence, spectroscopy, microbiology and liquid secondary-ion mass spectrometry. In nanomaterials, the sulfur atom coordinates with metal-rich semiconductor surfaces, while the hydroxyl groups promote aqueous dispersibility; this combination supports its use in quantum-dot synthesis, nanoparticle capping, surface passivation and subsequent bioconjugation. Additional demand arises from specialty organic synthesis, polymer chain regulation and the preparation of multifunctional polythiols for optical resins, coatings and adhesives.

Future development will concentrate on pharmaceutical compliance, nanoparticle surface chemistry and high-purity small-batch supply. Expansion of biologics, complex injectables and oxidation-sensitive formulations will support demand for low-elemental-impurity and fully traceable pharmaceutical grades. Quantum dots, biosensors, near-infrared imaging and aqueous nanoparticle processing will sustain its role as a compact hydrophilic thiol ligand. Chinese suppliers are moving from general reagent and custom-synthesis offerings toward pharmacopoeial grades supported by controlled impurity profiles and customer-audit packages. Manufacturing investment will emphasize inert-gas handling, low-temperature vacuum purification, sulfur-emission treatment, low-metal contact equipment and clean small-pack filling. Competitive differentiation will increasingly depend on disulfide content, elemental impurities, color stability, shelf-life performance and application-specific documentation.

This report studies the global 1-Thioglycerol production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for 1-Thioglycerol and provides market size (US\$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of 1-Thioglycerol that contribute to its increasing demand across many markets.

Highlights and key features of the study

Global 1-Thioglycerol total production and demand, 2021-2032, (Tons)

Global 1-Thioglycerol total production value, 2021-2032, (USD Million)

Global 1-Thioglycerol production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (Tons), (based on production site)

Global 1-Thioglycerol consumption by region & country, CAGR, 2021-2032 & (Tons)

U.S. VS China: 1-Thioglycerol domestic production, consumption, key domestic manufacturers and share

Global 1-Thioglycerol production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (Tons)

Global 1-Thioglycerol production by Purity, production, value, CAGR, 2021-2032, (USD Million) & (Tons)

Global 1-Thioglycerol production by Application, production, value, CAGR, 2021-2032, (USD Million) & (Tons)

This report profiles key players in the global 1-Thioglycerol market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Asahi Chemical, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World 1-Thioglycerol market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US\$ Millions), volume (production, consumption) & (Tons) and average price (US\$/Kg) by manufacturer, by Purity, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

Global 1-Thioglycerol Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global 1-Thioglycerol Market, Segmentation by Purity:

98%

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