

M C P S E R V E R

N O C O D E

C L O U D H O S T E D

Cold Stabilization Time MCP

Get precise crystallization kinetics for your wine production.

Cold Stabilization Time MCP handles the heavy lifting for wine chemistry calculations. It determines how long you need to hold wine at specific temperatures, calculates exact tartrate seeding doses, and builds cooling schedules for tanks or barrels. Your AI client uses these tools to manage crystallization kinetics and thermal profiles without you needing to run manual formulas.

A+ Quality Score 100/100

wine

stabilization

crystallization

tartrates

kinetics



The connectivity layer between AI and the world's software.

Vinkius sits between AI and every application. All communication passes through Vinkius Cloud via the Model Context Protocol (MCP) — with governance, observability, and security at every layer.

Your AI Connections Run Through Vinkius Cloud

The world's largest
managed MCP catalog

Vinkius is the connectivity layer where AI connects to the software your business already runs. We handle the hosting, the security, the credentials, the uptime — you get agents that actually do things.

We operate the world's largest managed MCP catalog. Major SaaS platforms, CRMs, databases, and cloud providers — running, monitored, production-ready. This MCP server is hosted and maintained by the Vinkius Cloud for AI Agents.

The agent doesn't manage credentials, doesn't manage uptime, doesn't manage security. Vinkius does.

— Architecture principle

Four Pillars of the Vinkius Runtime

01 — Security by design

Credentials stay encrypted at rest via AES-256. The AI agent never touches raw keys — they're injected into a sandboxed V8 isolate at runtime. Actions are logged, and connections have an emergency kill switch.

03 — Deterministic observability

Eight immutable metrics per endpoint: request volume, p95 latency, error rate, active connections, cost attribution. A live payload feed logs every tool call with mutation detection.

02 — Built on MCP Fusion

This MCP server was built with **MCP Fusion**, the open-source framework (Apache 2.0) that powers the entire Vinkius catalog. Schema-as-firewall strips undeclared fields, compiled PII redaction runs at zero overhead, and cryptographic lockfiles produce git-diffable audit trails.

04 — Autonomous operations

Servers are deployed, monitored, and patched autonomously. New capabilities and security patches ship weekly. Zero-downtime deployments ensure continuous availability across all managed MCP servers.

AES-256

Encryption at rest

Ed25519

PKI vault signatures

24h TTL

Ephemeral session keys

V8 Isolate

Sandboxed execution

One Token. Instant Access.

Every MCP server on Vinkius is accessed through a **Connection Token**. Tokens are generated in the cloud dashboard and produce a unique MCP endpoint URL. Paste this URL into any MCP-compatible client — no SDK required.

A single token can serve **multiple AI clients simultaneously**, or you can issue separate tokens per client for granular access control. Each token tracks its own request count, last activity timestamp, and can be individually enabled or revoked.

MCP ENDPOINT`https://edge.vinkius.com/{token}/mcp`

Claude



Cursor



VS Code



Windsurf



Grok



Gemini

Security Is the Architecture

Security in Vinkius is not a feature — it's the foundation of the runtime. The gateway enforces multiple independent protection layers between AI agents and third-party APIs.

01 — Ed25519 PKI Vault

Every workspace has an Ed25519 Master Key. Session keys are generated ephemerally (24h TTL) and signed by the Master Key. Credentials never leave the vault boundary.

02 — V8 Isolate Sandboxing

Tool code runs inside isolated-vm V8 isolates with 64 MB memory caps and per-request timeouts. No filesystem access, no network access except through the SSRF-guarded fetch bridge.

03 — SSRF Guard

All outbound HTTP requests are DNS-resolved and validated before execution. Private IP ranges (10.x, 172.16-31.x, 192.168.x, AWS metadata 169.254.x) are blocked at the network layer.

05 — Cryptographic Audit Trail

Every request is signed into a SHA-256 hash chain with Ed25519 signatures. Events form a tamper-proof, SIEM-exportable forensic record.

04 — DLP & PII Redaction

A ResponseGuard pipeline intercepts every tool response. Configurable redaction patterns strip sensitive fields (emails, SSNs, card numbers) before data reaches the AI agent.

06 — Honeypot Trap System

Phantom credentials are injected into isolated environments. If a honeypot is used outside Vinkius infrastructure, the server is quarantined instantly.

Emergency Kill Switch

EU AI Act Art. 14(1)
Compliant

The kill switch is an **emergency halt** mechanism — not a simple toggle. When triggered, it executes three actions atomically:

01 — Server deactivated

The MCP server is immediately taken offline across the entire cluster.

02 — All tokens revoked

Every connection token is invalidated. Total lockout — reconnection blocked until new tokens are issued.

03 — WebSocket connections killed

Active connections terminated via Redis pubsub broadcast. Propagates to every runtime node in the cluster.

Full Visibility. Zero Guesswork.

The Vinkius cloud dashboard includes a full MCP Governance suite — real-time analytics and security controls for production AI operations.

Control Plane

KPI dashboard with request volume, latency, success rate, token consumption, and AI-generated operational briefings.

FinOps

Cost tracking per tool, payload compression savings, budget optimization signals, and consumption trends.

Firewall & DLP

PII redaction activity, sensitive data protection counters, and security event timeline.

Agent Activity

Which AI clients are connecting, how often, and what they're doing — real-time session tracking.

Tool Health

Slowest and most error-prone tools, with actionable root-cause insights and performance baselines.

Incident Log

Error trends, failure rates, status-code breakdowns, and forensic audit trail access.

Get started at cloud.vinkius.com — connect your AI agent in under 60 seconds.

Cold Stabilization Time MCP

4 tools available

Cloud-hosted on Vinkius

You can stop guessing how long your wine needs to sit in the cold. This MCP gives your AI client the math it needs to manage tartrate stability. Instead of manual calculations, you tell your agent your target temperature and vessel type, and it handles the kinetics. You can figure out exactly how much seeding dose to add to speed up precipitation or compare how much time you save by using crystals versus letting it happen spontaneously. It also builds specific cooling schedules for different setups, whether you are working with large tanks or individual barrels. It turns your AI into a specialized enology assistant that understands thermal profiles and crystallization timing.

Core Capabilities

01 — Kinetics Calculations

Your agent uses this to determine the timing of crystal formation.

02 — Dosing Requirements

The AI calculates the precise mass of tartrates needed for seeding.

03 — Thermal Scheduling

Your client generates step by step cooling instructions for different vessels.

04 — Method Comparison

The AI evaluates the time savings between spontaneous and seeded stabilization.

One Click on Vinkius — From Prompt to Execution

Available at vinkius.com/en/ai-agent-connect/cold-stabilization-time — connect your AI agent in three steps.

- 01 Connect your preferred MCP client like Claude or Cursor to Vinkius.
- 02 Ask your agent to calculate stabilization times or seeding doses.
- 03 The MCP runs the crystallization kinetics math.
- 04 Your agent delivers the specific duration, dose, or thermal profile.

Connect your AI client to Vinkius and start running chemistry calculations immediately.

Built For

This MCP is built for professionals managing wine stability and cellar operations.

Winemakers

They hand off stabilization math to the AI to focus on fermentation and flavor.

Enologists

They use the tool to model crystallization kinetics and dosing needs.

Cellar Managers

They use the generated thermal profiles to manage tank and barrel cooling schedules.

What Changes When You Connect

- 01 Calculates precise seeding doses to reduce stabilization time.
- 02 Generates specific cooling schedules for tanks and barrels.
- 03 Compares spontaneous versus accelerated methods for better planning.

- 04** Provides exact holding times based on temperature and vessel type.
-

Real-World Applications

Accelerated Stabilization

Use seeding doses to shorten the time wine spends in cold storage.

Barrel Cooling

Get specific thermal profiles for stabilizing wine held in barrels.

Tank Management

Generate cooling schedules for large volume tanks to ensure stability.

Process Optimization

Compare traditional cooling against seeding to decide on the best production path.

4 Tools Available

#	TOOL	DESCRIPTION
01	calculate_seeding_requirements	This tool calculates the exact amount of tartrate crystals you need to add to speed up the precipitation process.
02	calculate_stabilization_duration	Use this to find out how long a wine must be held at a specific temperature to reach your target stability level.
03	compare_stabilization_methods	This tool compares the efficiency of traditional spontaneous cooling against accelerated seeding methods.
04	get_thermal_profile	This tool generates a specific temperature schedule to follow during the stabilization process.

See It in Action

Real prompts you can use once this MCP is connected to your AI agent through Vinkius Cloud.

U How long will it take to stabilize a white wine in a tank at -4 degrees Celsius?



The stabilization process in a tank at -4°C will take 4.5 days to reach standard stability.

U What is the required seeding dose for this wine composition?



The required seeding dose is 1.2 grams per liter to achieve high stability.

U Show me the cooling schedule for a barrel.



The cooling schedule for the barrel includes a gradual descent at 0.5 degrees per day followed by a 48-hour hold.

Frequently Asked Questions

01 What can this MCP calculate for winemaking?

It calculates stabilization duration, seeding doses, and thermal profiles for different vessels.

02 Does it work with different types of containers?

Yes, it can generate thermal profiles specifically for tanks or barrels.

03 How do I use this with Claude or Cursor?

You connect your client to the Vinkius platform, and the tools become available to your agent automatically.

04 Can it help me speed up the stabilization process?

Yes, you can use the seeding requirements tool to find the right dose to accelerate precipitation.

05 Can I compare different stabilization methods?

Yes, the tool allows you to compare spontaneous cooling against the accelerated seeding method.

06 How does seeding affect stabilization time?

Seeding provides nucleation sites that significantly reduce the time needed for tartrate precipitation compared to spontaneous cooling.

07 Does the vessel type matter for calculations?

Yes, the ``get_thermal_profile`` tool accounts for the different thermal mass and surface-to-volume ratios of tanks versus barrels.

08 Can I compare traditional and seeding methods?

Yes, use ``compare_stabilization_methods`` to see the efficiency gain and time saved by using the seeding approach.

Go Live in 60 Seconds

Get your connection token from cloud.vinkius.com, then paste the endpoint URL into any MCP-compatible client.

YOUR MCP ENDPOINT

`https://edge.vinkius.com/[TOKEN]/mcp`

CLIENT	WHERE TO CONFIGURE
 Claude AI	Profile → Customize → Connectors → "+" → Add custom connector → Paste endpoint
 Cursor	Settings → Features → MCP Servers → "+" Add New MCP Server" → Type: SSE → Paste endpoint
 VS Code	Ctrl/Cmd+Shift+P → "MCP: Add Server" → add <code>"cold-stabilization-time": { "url": "..." }</code>
 Windsurf	MCP Settings → <code>mcp_settings.json</code> → Add endpoint URL
 ChatGPT	Settings → Tools & plugins → Add MCP server → Paste endpoint
 Gemini	Extensions → Add MCP Server → Paste endpoint URL

ASK AN AI ABOUT THIS

Let your preferred AI explain this MCP server

-  Ask ChatGPT 
-  Ask Claude 
-  Ask Perplexity 
-  Ask Gemini 
-  Ask Grok 

READY TO CONNECT

Cold Stabilization Time is live on Vinkius Cloud.

Get your connection token, paste it into your AI agent, and
start building. No SDK. No deployment. Just results.

Start at cloud.vinkius.com →

vinkius.com · support@vinkius.com

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DOCUMENT INFORMATION

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Platform	Vinkius Cloud for AI Agents
Endpoint	https://edge.vinkius.com/{token}/mcp

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