MCP SERVER | NO CODE | CLOUD HOSTED

Brine Water Calculator MCP

Get exact salt and water measurements for any salinity target.

Brine Water Calculator MCP handles the heavy lifting for brine preparation math. Your AI client can instantly calculate the salt mass needed for a specific volume, determine the water required to dissolve a set amount of salt, or check if a mixture will actually stay in solution. It removes the guesswork from chemical concentrations and salinity management.

A+ Quality Score 100/100

salinity | brine | salt | water | chemistry-tools

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vinkius.com/en/ai-agent-connect/brine-water-calculator

SCAN TO VIEW

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.

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.

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.

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	Ed25519	24h TTL	V8 Isolate
Encryption at rest	PKI vault signatures	Ephemeral session keys	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.

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.

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.

06 — Honeytoken Trap System

Phantom credentials are injected into isolated environments. If a honeytoken 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.

Agent Activity

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

FinOps

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

Tool Health

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

Firewall & DLP

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

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.

Brine Water Calculator MCP

4 tools available
Cloud-hosted on Vinkius

Stop manually calculating salt concentrations and risking saturated solutions. This MCP gives your AI agent the mathematical precision needed to prepare brine solutions for any application. Whether you are working in marine biology, food science, or industrial chemical processing, you can hand off the math to your agent.

You can use it to find the exact mass of salt required for a specific volume of water or determine how much water you need to dissolve a specific pile of salt at a target concentration. It also includes a safety check to ensure your salt and water ratio won't result in undissolved salt settling at the bottom of your container. It is a direct way to turn your AI client into a precise laboratory assistant for salinity management.

Core Capabilities

01 — Mass Calculation

Your agent calculates the exact weight of salt needed for a target concentration.

02 — Volume Determination

The AI finds the necessary water volume to dissolve a specific amount of salt.

03 — Concentration Checking

Your client determines the resulting salinity of a known mixture.

04 — Saturation Verification

The agent confirms if a salt and water ratio is physically achievable.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/en/ai-agent-connect/brine-water-calculator** — connect your AI agent in three steps.

01 Connect your AI client to the Vinkius hosted MCP.

02 Provide your target salinity, salt mass, or water volume in a prompt.

03 The agent invokes the specific tool needed for your calculation.

04 Receive the precise measurement or saturation check immediately.

Connect the MCP to your client and start asking for specific brine measurements.

Built For

This MCP is built for professionals who need to manage precise liquid concentrations without manual math errors.

Marine Biologists

They hand off saltwater tank salinity calculations to the agent.

Food Scientists

They use the agent to calculate brine concentrations for preservation processes.

Chemical Technicians

They delegate the math for preparing specific saline solutions to their AI client.

What Changes When You Connect

01	Eliminates manual calculation errors in brine preparation.
02	Prevents wasted materials by verifying saturation limits before mixing.
03	Speeds up lab and industrial workflows by automating concentration math.

Real-World Applications

Aquarium Setup

Calculate the exact salt needed to reach specific salinity for marine life habitats.

Food Preservation

Determine the water volume needed to create consistent brine for curing processes.

Chemical Lab Prep

Verify if a specific salt mass can be fully dissolved in a given water volume.

Industrial Brining

Check the resulting salinity of large scale mixtures after adding salt to water.

Patterns to Avoid

Guessing saturation limits

✗ AVOID

You assume a massive pile of salt will dissolve in a small bucket of water and start mixing.

✓ INSTEAD

Run `verify_saturation_limit` first to ensure the salt won't just sit at the bottom of the container.

Manual concentration math

✗ AVOID

You try to calculate the final salinity percentage by hand after dumping salt into a tank.

✓ INSTEAD

Let your agent handle the math using `get_salinity_from_masses` to get an exact percentage.

Inaccurate salt requirements

AVOID

You estimate how much salt to add to a tank and end up with the wrong salinity for your marine life.

✓ INSTEAD

Use `calculate_salt_mass` to find the precise weight needed for your specific water volume.

The Right Fit

Connect this MCP if your work involves precise liquid concentrations in labs, aquariums, or food processing. Do not connect it if you are just doing rough estimates for non-critical applications. The decision rests on whether a math error in your brine solution could ruin a batch or harm biological life.

Brine Water Calculator MCP Tools

Four specialized tools for calculating salt mass, water volume, salinity percentages, and saturation limits.

#	TOOL	DESCRIPTION
01	calculate_salt_mass	This tool finds the exact amount of salt you need to hit a target salinity for a specific water volume.
02	calculate_water_for_salt	Use this to determine the volume of water required to dissolve a specific mass of salt at your desired salinity.
03	get_salinity_from_masses	This tool calculates the final salinity percentage when you combine a known mass of salt with a known volume of water.
04	verify_saturation_limit	This tool checks if your salt and water ratio is physically possible or if the salt will simply settle at the bottom.

See It in Action

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

U How much salt do I need to add to 50 liters of water to get a 3% salinity?

To achieve a 3% salinity in 50 liters of water, you need to add 1.546 kg of salt.

U I have 5kg of salt. How much water do I need for a 10% salinity solution?

You need 45 liters of water to create a 10% salinity solution using 5kg of salt.

U What is the salinity if I add 2kg of salt to 10 liters of water?

The resulting salinity is 16.67%.

Frequently Asked Questions

01 **How do I use this MCP with Claude?**

You connect your Claude client to Vinkius, which hosts the MCP for you. Once connected, you can simply ask Claude to perform brine calculations using the tools.

02 **Can this MCP prevent salt from settling at the bottom?**

Yes. The verify_saturation_limit tool checks if your salt and water ratio is physically possible so you don't end up with undissolved salt.

03 **Do I need to host the MCP myself?**

No. Vinkius hosts and manages the MCP for you. You just connect your client and it is ready to use.

04 **What if I already know the salt and water amounts?**

You can use the get_salinity_from_masses tool to find out exactly what the resulting concentration will be.

05 **Can I calculate water volume based on salt weight?**

Yes. The calculate_water_for_salt tool tells you exactly how much water you need to dissolve a specific amount of salt at a target salinity.

06 **How do I calculate the salt needed for 10 liters of water at 5% salinity?**

You can use the `calculate_salt_mass` tool with a `waterVolume` of 10 and a `targetSalinity` of 5.

07 **Can I check if my salt will dissolve in the water?**

Yes, use the `verify_saturation_limit` tool to check if the salt mass and water volume combination is physically possible.

08 **What happens if I request a salinity that is too high?**

The tools will return an error if the requested salinity exceeds the physical saturation limits of water.

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 `"brine-water-calculator": { "url": "…" }`
Windsurf	MCP Settings → `mcp_settings.json` → 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

Brine Water Calculator 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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Endpoint	`https://edge.vinkius.com/{token}/mcp`

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