MCP SERVER | NO CODE | CLOUD HOSTED

Gasoline Blend Calculator MCP

Get precise fuel property calculations for complex gasoline blends.

Gasoline Blend Calculator is a specialized engineering MCP that handles the math for gasoline blending. It accounts for non-linear blending behavior by applying interaction factors to RON, MON, and RVP. You can use it to check if a mixture meets regulatory limits or to see how a specific component changes the final octane or volatility of a stream.

A+ Quality Score 100/100

gasoline | octane | rvp | blending | petroleum

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vinkius.com/en/ai-agent-connect/gasoline-blend-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.

Gasoline Blend Calculator MCP

4 tools available
Cloud-hosted on Vinkius

You can use this MCP to handle the heavy lifting of petroleum blending math. Instead of relying on simple linear averages, this tool accounts for the non-linearity found in real-world gasoline streams by applying interaction factors to RON, MON, and RVP. It is built for engineers who need to move from raw component data to a finished specification without manual calculation errors.

Your AI client can use these tools to run quick checks on blend integrity or to perform deep dives into how a single additive or component shifts the final product. Whether you are verifying if a new blend hits its target AKI or checking RVP compliance, the math is handled within the MCP. It simplifies the process of moving from component lists to actionable blending decisions.

Core Capabilities

01 — Non-linear Blending

The MCP applies interaction factors to account for non-linear behavior in RON, MON, and RVP.

02 — Compliance Checking

Your agent can verify if a blend stays within specific regulatory or target limits.

03 — Component Analysis

The tool identifies the specific influence of individual components on the final mixture.

04 — Data Validation

It runs integrity checks on raw component data to prevent errors in downstream calculations.

One Click on Vinkius — From Prompt to Execution

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

01 Connect your preferred MCP-compatible client to Vinkius.

02 Provide component data and interaction factors to your AI agent.

03 The agent uses the MCP tools to run the math and validation.

04 Receive precise property results or compliance confirmations immediately.

You connect the MCP to your AI client and start providing blending data.

Built For

This MCP is designed for professionals working in petroleum refining and fuel blending.

Refinery Engineer

Hands off component data to the AI to verify blend properties and compliance.

Fuel Blending Technician

Uses the tool to check if a specific mixture meets octane or volatility targets.

Quality Control Specialist

Relies on the MCP to validate that finished products meet regulatory specifications.

What Changes When You Connect

01 Accounts for interaction factors to handle non-linear blending math.

02 Reduces calculation errors by validating raw component data first.

03	Provides direct feedback on whether blends meet target specifications.
04	Isolates the impact of individual components on final octane and volatility.

Real-World Applications

Regulatory Compliance

Check if a proposed gasoline blend meets specific AKI or RVP limits before production.

Component Impact Analysis

Determine how adding a specific component will shift the final octane rating.

Blend Optimization

Use interaction factors to predict the real-world performance of a mixture.

Data Integrity Checks

Verify that component input data is valid before running expensive calculations.

4 Tools Available

#	TOOL	DESCRIPTION
01	calculate_blend_properties	This tool calculates the primary performance and volatility characteristics for a complete gasoline blend.
02	get_component_contribution	This tool evaluates how a specific component influences the final octane or volatility of the blend.
03	validate_blend_inputs	This tool performs a preliminary check on raw component data to ensure integrity before running complex calculations.
04	check_specification_compliance	This tool determines if a calculated blend meets your specific target requirements and regulatory limits.

See It in Action

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

U Calculate the properties for a blend of 70% Component A (RON 95, MON 90, RVP 7) and 30% Component B (RON 90, MON 85, RVP 12) with interaction factors of 0.5 for RON, 0.2 for MON, and -1.0 for RVP.

The calculated blend properties are: RON 92.5, MON 87.5, AKI 90.0, and RVP 8.1.

U Is a blend with AKI 88, RON 92, MON 84, and RVP 9 compliant with limits of minAki: 87, maxRvp: 10?

Yes, the blend is compliant with all specified limits.

U How much does Component A contribute to the volatility of the blend?

Component A contributes 0.7 to the total volatility contribution based on its fraction and RVP.

Frequently Asked Questions

01 **How does this MCP handle non-linear blending?**

It applies specific interaction factors to RON, MON, and RVP to account for non-linear behavior in the mixture.

02 **Which AI clients can use this gasoline blend MCP?**

You can use this MCP with any compatible client, including Claude, Cursor, Windsurf, and VS Code.

03 **Can I check if my blend meets regulatory limits?**

Yes, the check_specification_compliance tool determines if a calculated blend meets your target requirements.

04 **Does the MCP calculate AKI?**

Yes, the tool calculates primary performance characteristics including AKI, RON, MON, and RVP.

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

No, Vinkius hosts and manages the MCP for you, so it is ready to use once you connect your client.

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 `"gasoline-blend-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

Gasoline Blend 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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